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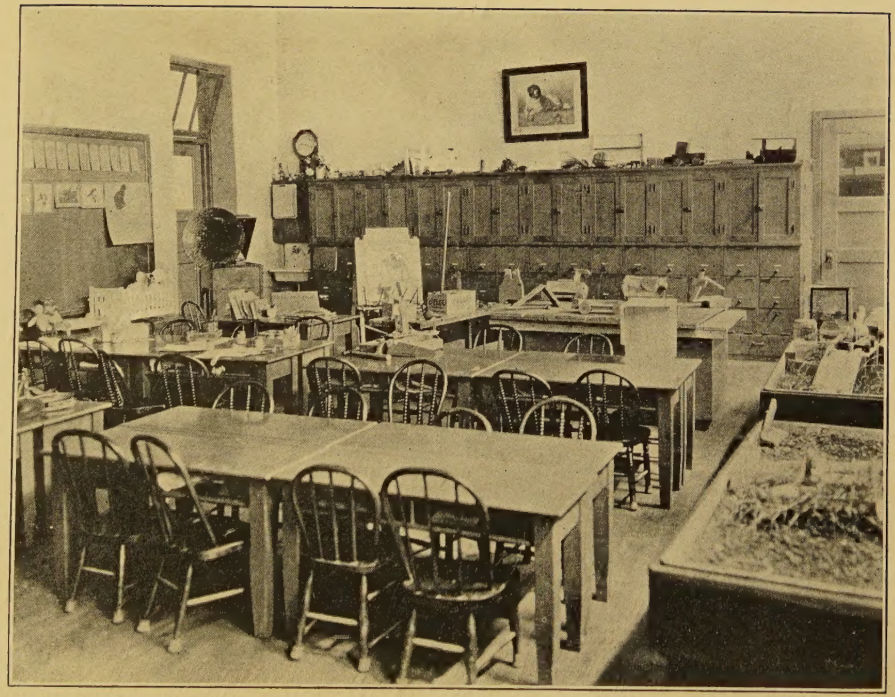

THE PRIMARY ACTIVITY ROOM AS A WORKSHOP, LONG BEACH, CALIFORNIA

THE PROGRESSIVE PRIMARY TEACHER

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EDITOR'S INTRODUCTION

Few parts of the public-school system have experienced a more profound change in direction and purpose and methods of work, during the past quarter of a century, than have the primary grades. The child-study movement of the nineties, the further study of individual differences which characterized the first decade of the present century, and the rise of intelligence studies which marked the second decade, have all combined to change materially our conception of the child and of the method of teaching him. As a result the problem has now become as much one of what abilities and aptitudes the child brings to school, and how these may be dealt with by the school, as it is of what and how we shall try to teach him after he comes there.

Similarly, the purpose in teaching the child has also changed with time. Instead of preparing him for adult life in a somewhat conventional adult world, we now try to train him for citizenship in a vastly more complex and at the same time a rapidly changing human society. Still more, we conceive of his education as designed to meet his needs of to-day as well as his needs of to-morrow. We also conceive of him as already a citizen of a world of his own which to him is real and vital.

This shift in the conception of the child to be taught and the purpose in teaching him, during the early years of his school life, has called alike for different instructional methods, radical reorganizations in the content of instruction, and a new type of schoolroom and instructional equipment. Teaching in the primary school of to-day is a much less routine proceeding and a far freer and more varied undertaking than it was a quarter of a century ago. An

entirely new theory as to methods and aims and procedures now dominates the primary school.

The result of this shift in emphasis has been that many primary teachers find themselves to-day somewhat at a loss to know just how best to organize and carry on their instruction. To one trained in the drill procedures of a generation ago the pupil-initiative procedures of to-day seem like a letting-down in the old thoroughness; it seems that something of a disorganization in the school work has taken place. On the other hand, some of our so-called modern schools for primary children, where the working-out of the newer theory of the school in accordance with the normal development of the child is attempted, appear to both teachers and intelligent parents to be hit-and-miss affairs rather than schools of creative education. The new theory as to the primary school seems sounder than do its applications.

It is just this problem of the apparent conflict between modern educational theory as to the normal development of the child and current practices in the primary school with which the authors of the present volume in this series of textbooks deal. They have examined the problem both from the standpoint of theory and of practice, and have shown how the best of modern educational theory as to the child and his training can be applied in the organization and in the technique of instruction in the primary school. They have tried to describe the best modern practices in primary instruction, and to interpret these in terms of the normal development of the child. In doing this they have given us a volume of large practical usefulness, and one which will be found to be very helpful by any one — teacher or parent — interested in a study of the best of modern primary-school theory and procedures.

ELWOOD P. CUBBERLEY

PREFACE

A NEW interest in the technique of teaching in the first grade has been developing with us for a decade or more. The adjustment of regular school work to kindergarten has been one of the causes for this movement. The necessity of fitting the kindergarten graduate into the more formal first grade has been a growing problem. The gap between rooms of varying type has challenged both kindergartners and primary teachers to some sort of adjustment, on the part of both, for the sake of the child. Their differences were largely matters of curriculum and methods, especially the latter. The movement to reconcile these differences has now proceeded on the plane of national organization for some years, and has found its place in the training of teachers in the normal schools having courses of the composite kindergarten-primary type.

Another movement which has quite as profoundly affected the work of the primary teacher has been the more recent evolution of the project method, and the formulation of project or activity curricula. While this movement has gone to quite the extreme of a fad, it nevertheless has important values for the primary year, and these the authors have tried to point out.

In the last few years several books have been published dealing with the work of the first grade, or with that of the kindergarten and primary grades combined, or with the teaching of the first three grades. Much of this literature is extremely radical in its discussion of content and methods; none of it has taken a conservative point of view. True, the older type of primary teaching was highly formal and dead-

ening, but the newer programs are often confusing and futile. Even the fundamental function of the primary grade — the teaching of reading — has been lost sight of or made so incidental as to become ineffective. Many of the newer programs are too extreme to be adaptable to the typical public-school situation.

It is the purpose of this book to serve as a reading book for primary teachers, and as a textbook for those who are being trained for that special field of public-school service. It is intended to present the best of the progressive technique in first-grade teaching, but without going to impracticable extremes. Through actual primary teaching experience and extensive supervision of such work, followed by the training of teachers for it, it has been possible to bring together a large amount of progressive and practical material that has been tried out by use in the primary room. A special emphasis has been placed on showing the construction and use of interesting and successful games and devices.

The authors have tried to combine suggestions for introducing a large measure of freedom and naturalness, in the teaching of beginners, with the instruction in beginning reading as the center of the year's work. In doing this they have recognized that, in the great majority of primary rooms, this instruction will have to be carried on, for many years to come so far as equipment and program are concerned, with a course of study still following the division into subjects.

The book is divided into three parts. Part I deals with the external background — the primary room and its equipment — from the point of view of the most progressive developments, since reform is most widely needed here. Part II deals with the primary child, the teacher's preparation, and the general problems of management. A distinctive contribution has been attempted in the chapter on testing

and classification, especially in the matter of the new vocabulary and experience tests. It is believed that the tests there given will be very useful to the teacher. In Part III special methods are taken up, from the subject point of view, especially for the work in reading, in number work, in handwork and play, and in language development. Problems of classroom management and of the psychological background have been woven in with the discussion of curriculum and method, and many tried teaching devices have been shown and their use described. In the form here given it is felt that the book cannot help but be of much service to the primary teacher and the prospective primary teacher in our schools.

The authors wish to acknowledge their appreciation to several publishers for permission to reprint extracts from books dealing with special problems of child psychology: to The Macmillan Company for permission to use several valuable extracts from E. L. Thorndike, *The Psychology of Arithmetic*, and from H. S. Jennings, *Suggestions of Modern Science Concerning Education;* to Charles Scribner's Sons for a quotation from Margaret E. Mathias, *The Beginnings of Art in the Public Schools*, and to the World Book Company for permission to reproduce a facsimile page from one of their primary intelligence tests and descriptions of several of these tests. They also wish to express their indebtedness to Mr. Fred Lueders, vice-principal of the Compton Union High School, for drawings used in connection with the vocabulary tests in Chapter V.

MARTIN J. STORMZAND
JANE W. MCKEE

CONTENTS

PART I

THE PRIMARY ROOM AND EQUIPMENT

I. The Primary Classroom 3

1. What child nature demands 3
2. Criteria of the primary classroom 8
3. A modern primary room 19

II. Work Centers 24

1. Meaning of "work centers" 24
2. Values and dangers of project curriculum 28

III. Equipment and Supplies 38

PART II

THE CHILD AND THE TEACHER

IV. The Kindergarten-Primary Child 49

1. Place of home experiences 50
2. Relation of the school to the home 54
3. Place of the kindergarten in the child's development . 61
4. The educational value of the kindergarten . . . 65

V. Testing and Classification of the Pupils . . . 75

1. Entrance classification 75
2. Systematic testing programs 81
   a. Physical examination 81
   b. Intelligence testing 83
   c. Tests for experience and vocabulary 88
   d. Tests for emotional traits 116

VI. Management and Discipline 119
1. The meaning of classroom management 119
2. The meaning of discipline 128
3. General principles in discipline 138

VII. The Primary Teacher 145
1. The primary teacher's personality 145
2. The teacher's special preparation in knowledge and in technique 155

PART III

THE CURRICULUM AND METHODS OF WORK

VIII. Psychology of Curriculum and Method . . . 165
1. Psychology as a basis for method 165
2. Types of learning in primary work 168
3. General methods in primary work 184

IX. Psychology and Method of Primary Reading . . 199
1. The place of first-grade reading in the general reading program 199
2. Practical suggestions for the teaching of primary reading 204

X. Devices for Teaching Primary Reading . . . 224

XI. Primary Number Work 258
1. Psychology of primary number work 260
2. Method in primary number work 272
3. Primary number games and devices 281

XII. The Activities of the Primary School . . . 312
1. Art and drawing 312
2. Primary music 317
3. Handwriting 320
4. Purposeful handwork 324
5. Recess and outdoor activities 326

XIII. Expression and Language Work 331
1. Language work in the primary school 331
2. Expression work of the primary grades 337

Index 345

FIGURES AND PLATES

FIGURES

An Old-Type Primary Room 7
The Same Room, Rearranged 11
A Kindergarten-Primary Room 13
A Kindergarten or Primary Room 15
Daily Program in a Platoon Primary Room . . . 20
Test Picture for Vocabulary Test III
The Circus . . . . . *Between* 94, 95
Test Picture for Vocabulary Test IV
Taking a Trip . . . . . *Between* 94, 95
Test Picture for Vocabulary Test V
On the Farm . . . . . *Between* 94, 95
Test Picture for Vocabulary Test X–A
Playing House . . . . . *Between* 100, 101
Test Picture for Vocabulary Test X–B
The Kitchen . . . . . *Between* 100, 101
Test Picture for Vocabulary Test X–C
Fruit . . . . . *Between* 100, 101

PLATES

The Primary Activity Room as a Workshop . . *Frontispiece*
The Supply Closets of a Modern Primary Room *Facing* 18
Sample Page from the Pintner-Cunningham Primary Mental Test 87
Reading Material Based on Group Activity . *Facing* 207
A Sand-Table Construction Project . . . *Facing* 326

THE PROGRESSIVE PRIMARY TEACHER

PART I

THE PRIMARY ROOM AND EQUIPMENT

THE PROGRESSIVE PRIMARY TEACHER

CHAPTER I

THE PRIMARY CLASSROOM

1. What child nature demands — Unfair criticism of public education — The formal room — The needs of child nature.
2. Criteria of the primary classroom — Are the child's health and comfort considered? — Are there centers of interest? — Is the room a workshop? — Does the room invite study? — Is the room arranged in a social manner? — Are the furniture and equipment properly placed? — Is the storing of supplies orderly and convenient? — Is the room artistically attractive and inspiring?
3. A modern primary room — A new type of primary room — A new theory as to education finding expression — Making over an old-type room.

Selected references.

1. What child nature demands.

When a child first enters school he comes with five or six years' experience behind him. That experience may be summed up in two words — Home and Play. These have been his learning environment; he now confronts a new one. This new environment is unfortunately to be too largely an artificial, formal atmosphere, not only severely different from the free and natural past, but one that will continue as a contrast to the other, for the early influences will still run parallel to the new. His home and play environment will continue, with greater freedom and naturalness, their influences in the child's development. The most severe criticisms of the school — and some very severe criticisms have

recently been made [1] — are directed at this lack of freedom and naturalness.

Unfair criticism of public education. In criticising the conventional primary room, or in working out a series of suggestions for a room that will be better suited to the changing conceptions that psychology is giving us of the child's nature, it is easily possible to go to faddish or impractical extremes. Much of the literature that criticizes the public school presents as a contrast some private-school experiment where children are given all the comforts of home and all the solicitude and attention of devoted parents. One who gives such counsel of perfection for public school conditions is performing no practical, helpful service. Public-school education cannot afford a plant and equipment, nor instruction, that will be comparable to private-instruction experiments provided regardless of expense. It is easy to argue that the public *should* provide all that the most progressive would like to have, but no one expects that the public will tax itself to this extent. It is good educational leadership to work constantly for a more generous support of education; it is ridiculous to criticize educational leaders because they have not secured more.

Critics have lost sight of the fact that much of the school's artificiality — its difference from real life, its lack of freedom and naturalness — is inevitable if we are to have educational opportunities at public expense for *all* children. Education of the masses must mean mass education, group training, and classification to a considerable extent. Until the public can or will support universal, free, and individual instruction, public education must mean a more or less artificial, formal, and unnatural education.

Teachers and school administrators, however, have taken this artificial, formal character of public instruction too

[1] Unfairly severe, for example, in *A Mother's Letters to a Schoolmaster*.

largely for granted. They have blindly continued following it at its traditional worst, when much could have been done to mitigate the unnatural, formal ways of school management and instruction.

The formal room. Nowhere does this unnatural, formal atmosphere and attitude strike one so forcibly as in the average primary-grade room. The formal rows of fixed seats, the silence, the precise group movements, the prominence of group rote learning, the scholastic barrenness of the room — all these strike one as artificial education at its worst. Such formalism presents a painful contrast to the typical kindergarten room, and is quite unlike the average child's out-of-school environment.

The new learner's adjustment, whether he comes from home for the first time, or comes into the regular school work from the kindergarten, must be a painful one; at best it is far from a happy experience.

What can the teacher do to make this new learning environment more attractive, more interesting, and more stimulating? At least, if this new life must necessarily prove somewhat formal, can it not be kept from irksomeness; if somewhat artificial, can it not be so motivated as to avoid inefficiency; if it is not to be made entirely natural, can it not be kept from deadening dullness?

When the child comes into the primary room directly from the home, or from a year's experience in the kindergarten, the adjustment to the formal classroom must be a serious hardship; and this is entirely unnecessary.

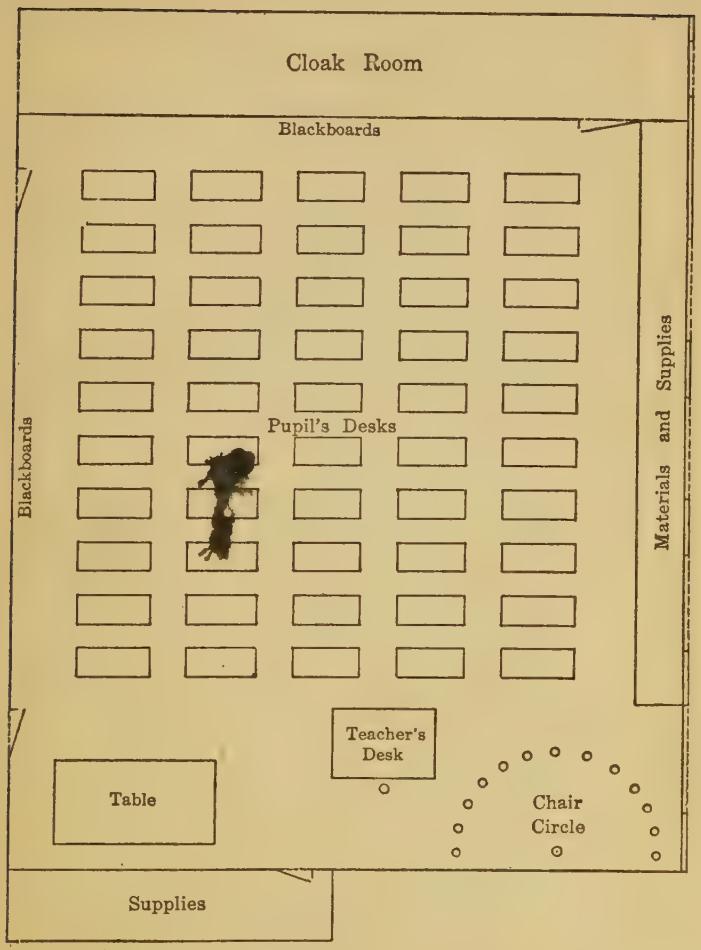
The conventional primary room, even more than the conventional upper-grade room, is far from what it should be to meet the requirements of the child's nature and his learning needs. Commonly the room is made and equipped after a traditional type, and is quite uniform with all the other grade rooms of the school. It is unnatural for any elemen-

tary-school child to sit for several hours in a fixed seat before a desk. It is positively cruel to expect a primary child to do this, even if frequent intermissions are planned by the teacher. Board members, superintendents, principals, and teachers fail to get the child's point of view regarding such an experience. Few adults could stand the ordeal, but the child's suffering must be many times more intense. For him, activity and freedom of movement are absolutely necessary to his comfort and happiness.

In bridging the gap between the home and the school, or the kindergarten and the first grade, we must model our pattern from child play life, from the home, and from the kindergarten, with provision for the additional materials and equipment necessarily called into use in the first steps in formal public-school grade learning.

The needs of child nature. The primary child is ceaselessly active in body and mind. The word "go" expresses his behavior and his interest. He loves to go, and he loves to make and see things go. The primary classroom, then, must move. It is no mere fad or commercial exploitation that has produced the movable furniture for the primary grade. Child psychology applied is the greatest argument in favor of it. The primary room in which forty moving children are acting and reacting and growing, will, of necessity, vary in appearance, accommodating itself to the changes and development of the occupations carried on within it. Now all the tables and chairs are pushed back against the walls, giving free, open space for the dramatization of games. A little later they will be grouped in the center of the room, leaving the wall space free for blackboard work. Again the chairs will be arranged in a circle for a reading class, or the tables will be placed conveniently to the supply closets for construction work.

We may go to the original nature of the child for even



AN OLD-TYPE PRIMARY ROOM

further direction with regard to the primary classroom. The child is industrious, ingenious, persistent, exploring, investigating, constructing. His interest span on self-imposed tasks is much longer than on dictated ones. He is earnest, zealous, serious, and is found manipulating with each new situation. Our primary classroom, then, must provide that type of environment which the child's original nature demands. It will afford freedom under guidance, which is positive freedom; opportunity for initiative; informal arrangement of furniture; varied and appropriate materials and equipment; the proper social atmosphere for the child's coöperation with his fellows and sympathetic relations between himself and the teacher; and the selection of such subject-matter as will provide essentially first-hand contacts.

2. Criteria of the primary classroom

Are the child's health and comfort considered? Statistics show that entrance to school slows up or even stops the growth of a large proportion of our children. The pre-school environment of the home, then, does provide something which the school must become conscious of and must supply. These fundamentals may be summed up in the following terms — light, air, and activity. The problem of the teacher clearly then, is to attend to light, air, and activity for her group in such a way that healthy growth will be promoted.

Light. Most pre-school play is in a bright, cheery nursery or sunny out-of-doors. The mother is not concerned with noticing or adjusting the child's position so that the light comes over the left shoulder, but when she finds him squinting in the sun she bids him move to a shady place. Just so must the primary teacher concern herself with the problem of light, and appeal to the reason of the child to

move if he is not comfortable. So long as we seat a room of children in formal rows, and insist that they "stay put," we have a need of consulting the direction of the light to ward off resultant eye strain, but in proportion as we are able to break away from the formal seating arrangement and substitute in its place natural activity, we can safely let in the sunshine and be assured we are contributing to a more healthful situation.

Air. Wherein the public school has failed in supplying ideal ventilation conditions, the open-air school has succeeded. The effects of poor ventilation are usually not the result of lack of oxygen, nor of an increase of carbon dioxide, nor of the presence in the air of poisons given off by the body. Rather they are the result of a high and uniform temperature, a high degree of moisture in the air, and a lack of air movement. The solution of the ventilation problem is best arrived at in the open-air situation, and the nearer we can approach this ideal atmospheric condition the better.[1]

Activity. The avoidance of slow or retarded growth of children upon entrance into school lies in the schools' power to supply sufficient normal bodily activity under natural conditions. This point of view is well summarized by Dr. Herbert S. Jennings in his discussion of The Biology of Children in Relation to Education, in which he says:[2]

Schools already exist in which most or all of the evils have been done away with. If accounts are to be trusted, in some of the open-air schools the health and development continually improve as compared with children not in school; at the same time they make better intellectual progress. Schools are now carried on

[1] Jennings, H. S., and others: *Suggestions of Modern Science Concerning Education*, p. 37. Compare also Terman, L. M.: *The Hygiene of the School Child*, chap. x.

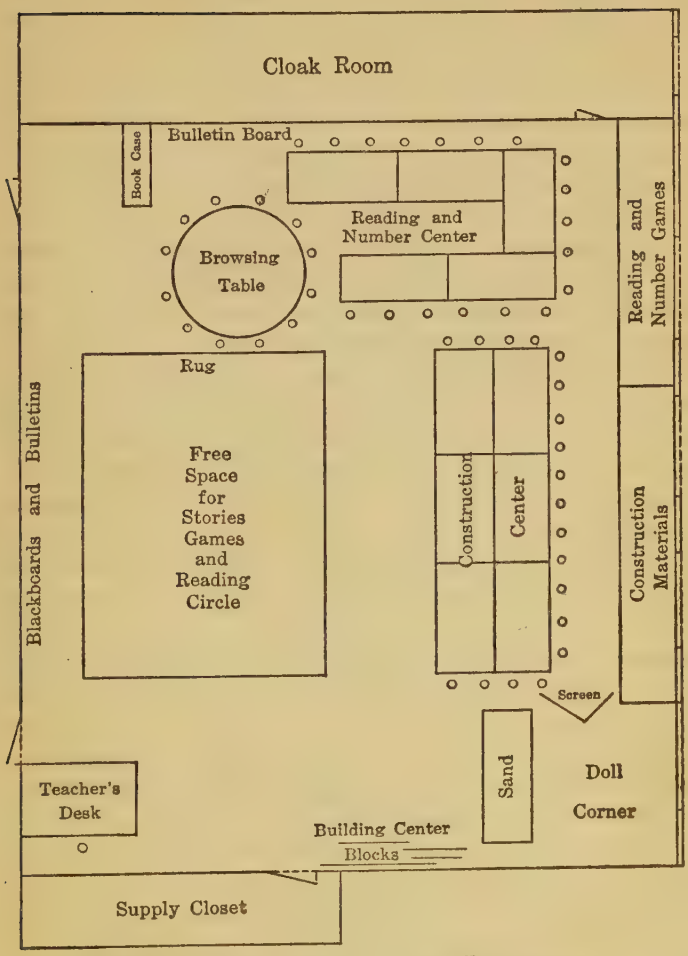
[2] From Jennings, H. S., and others: *Suggestions of Modern Science Concerning Education*, p. 49. Reprinted by permission of The Macmillan Co., publishers.

where individuality and spontaneity are cultivated, not repressed; where strain is not allowed to play its fearful part; where love for work, not hatred of it, is developed. The movement for increased activity in schools; for greater opportunity for play; for shortening of the hours of sedentary labor, is tremendously improving schools in the more advanced communities.

Are there centers of interest? There is nothing new or novel about arranging a room with respect to centers of interest and activity. It is the orderly method of organizing equipment and supplies, wherever it is found necessary to have on hand a large quantity. Stores, offices, libraries, banks, and homes all organize like materials into centers so that time is saved, order is assured, and confusion is minimized. In the library one's task of reference study is made easier by the segregation of fiction, non-fiction, recent books, classics, periodicals, children's books, and technical and professional books. One is further aided through the arrangement of tables, desks, rails, and gates, so that certain rooms are available where absolute quiet is maintained for study, and others where one may talk over one's needs, or check out books.

Similarly, in business or in industry, materials and activities are organized. In every grouping of this sort the organization is dominated by the purposes involved — efficiency, convenience, comfort, attractiveness. In school work our aim should be primarily to interest the children in a variety of educative activities.

The school, with its great variety of different materials and devices, has been slow to organize and systematize, from the point of view of educative interests and activities, the environment where so many young people mingle together. This is strikingly true of primary work, because of the greater variety of activity and the greater variety of materials involved. The fixed desk, with its individual text-



THE SAME ROOM AS THAT ON PAGE 7, REARRANGED

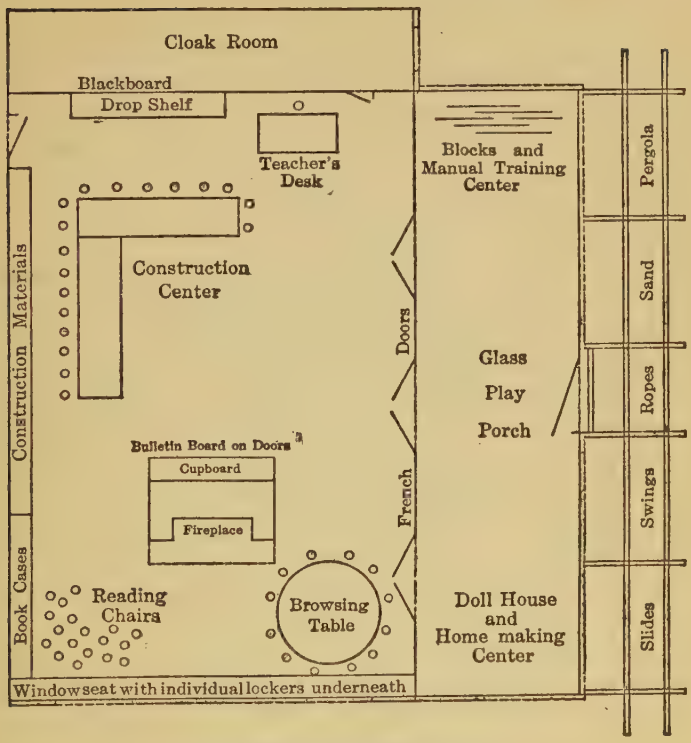
book shelf, may serve in the upper grades, if the teacher's knowledge and vision of materials and methods is all included in hearing pupils recite on textbook assignments, but even here progress in methods is beginning to demand more natural and more efficient arrangements. For the primary room the system is highly inefficient, and interferes with the progressive plans for work that have been evolved.

The variety of activities necessary to carry out the variety of purposes connected with the arousing and developing of many-sided interests must be provided, with the appropriate centers for each activity. Some of these interest centers will be described in Chapter II.

Is the room a workshop? The modern primary room, in contrast with the recitation room of the past, adopts a terminology which includes and suggests the manipulative and constructive activities carried on there. For this reason Miss Parkhurst has termed the Dalton-Plan classroom the "laboratory."

So we find this room to be a workshop, equipped and arranged to unify activity, promote order and neatness, and accommodate the varied materials in the most economical and convenient fashion. Thus our modernized first-grade room will bear a striking resemblance to a modernized kindergarten.

In this workshop, or laboratory, with its blocks, toys, tools, fabrics, paints, dyes, looms, threads, paper, and the discard materials of the home and community, purposeful toys and articles of utility are made from models in picture or pattern and from suggestions made jointly by the teacher and the children. Very often toys are brought from home that need a coat of paint, or a support here or a nail there, to restore them to their original usefulness and durability. Sometimes it is a kite that needs a new tail, a doll that needs a new dress, a hobbyhorse that needs new reins, or a



A KINDERGARTEN-PRIMARY ROOM

wagon that needs new wheels. This use of the workshop will be developed more fully in the next chapter.

Does the room invite study? Study has been termed "what one does to learn." A little child does many and varied things to learn, which might be listed, in brief, as follows: he explores, manipulates, dramatizes, constructs, plays, looks at pictures and objects, reads, and listens to music and stories.

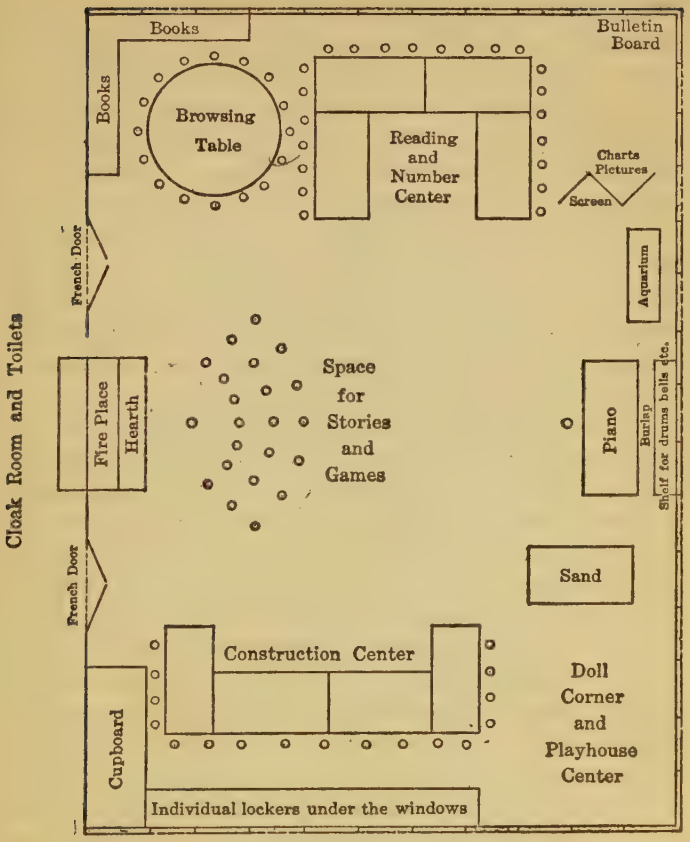
How, then, can a classroom invite study? In the pre-

vious section the study experiences included in experimental manipulation and construction, involving the use of proper materials and tools, were discussed. The more social and academic activities must be provided for in the same way. The exploring activity, the satisfying of curiosity by inspection, and an acquaintance with objects, pictures, and books, must all be provided for, and preferably in such centers as might be called the "museum," the "gallery," and the "library." Each of these centers must invite or challenge interest, by its rich attractiveness or by its constant variation.

Is the room arranged in a social manner? Granted that "social" pertains to holding friendly intercourse with others, then a room arranged socially must make provision for this intercourse.

It takes a stretch of the imagination to visualize friendly intercourse in a room where the faces of one's friends are not in evidence. The face offers the greatest opportunity to communicate ideas and emotions in a friendly manner, and yet we still persist in seating classes so that the faces are turned to the teacher alone.

Some types of furniture lend themselves more readily than others to the social situation. Tables and chairs, student chairs, and desk chairs fall into this category as opposed to formal desks and benches screwed in place to the floor. Unfortunately, it sometimes happens that a teacher who finds herself assigned to a classroom which boasts of movable tables and chairs, immediately sets about arranging this socially-adaptable furniture into formal unsocial rows. This can never be a satisfactory situation, because tables and chairs are not good substitutes for screwed-down desks. The unfortunate teacher finds herself spending most of her energy, strength, and patience trying to keep these tables in geometrically accurate formation, and endeavoring to grow immune to the scraping noise of the ever-



A KINDERGARTEN OR PRIMARY ROOM
Projecting from main building. Windows on three sides.

moving furniture. The wise administrator is careful to see that this formal teacher is happily housed in a formal-room situation.

The formal-room arrangement of rows of desks facing the teacher in the center-front of the room is a hold-over from

the monastery and church school, where rows of pupils faced the altar for instruction. Having transformed the course of study and the classroom, we must hasten to give up this outgrown formality. The teacher in the social situation finds no time to spend seated in the front of the room. She teaches from different points in the room, and passes about from group to group during the supervised study. Her desk is accordingly moved back to an inconspicuous corner of the room near the door, where visitors and notes from the office can be cared for without crossing the room and disturbing the class. This frees the front of the room for such social activities as story-telling, dramatization, reading, and conversation.

Are the furniture and equipment properly placed? Before this question can be answered, we must ask what governs the placing of furniture and equipment. It is governed by function, convenience, and appearance. Where we place the tables, chairs, bookcases, closets, and blackboards depends primarily upon the architecture of our room, secondarily on the type of activities carried on therein, and lastly upon how the different pieces of furniture will be used, what relation they must bear toward one another, and how they will contribute to the general attractive appearance of the room as a whole. This third consideration is always subordinate to the first two.

Tables used for construction work will be placed close to closets containing construction supplies. Reading and browsing tables will be placed convenient to the bookcases. The teacher's desk will be placed near the door. Equipment that children use will be arranged on low shelves and in closets, within easy reach of all. Bulk materials will be stored in large containers and made accessible for use without needless rearrangement. Maps, charts, and device material will be placed where most general need warrants, and

sand tables where the activities can be engaged in without interfering with other types of activity and play. Finally, the arrangement of all the furniture and equipment will be governed by the laws of order, neatness, harmony, and good taste.

Is the storage of supplies orderly and convenient? The great quantity of primary pictures, devices, patterns, games, visual aids, and supplies which every primary teacher accumulates, makes the problem of adequate, orderly, and convenient housing of them a perplexing one.

In determining the fitness of storage facilities one must be governed by the nature of materials. When we used individual boxes of water colors, three-inch by three-inch coated cutting and folding papers, parquetries, lentils, and miniature mats and weavers, we needed shallow cupboards with narrow shelves quite close together; now that we use pots of paint, rolls of paper, and bolts of cloth we need wide shelves placed farther apart. When the choosing of activities and materials was a teacher problem, the closets might be high; now that choosing is a child problem the closets must be low. When we used small boxes of one-inch cubes, we could pack them neatly in a window seat that opened at the top; now that we use yard-long blocks, we must provide a window seat which opens with a drop door on the side. When we labored under the illusion that children should have only what we chose to put before them, we preferred to keep our materials hidden behind solid wooden doors; with the children observing and then selecting for themselves, we place our materials on open shelves or behind glass doors.

With the practice of modern educational principles, and the provision of an abundant supply of tools of learning, we need much more storage space than formerly, and to prevent a sense of over-furnishing, long, low cupboards are placed under windows, with an occasional window seat breaking

the spaces interestingly. Roller drawers and open shelves are built into the walls. Hampers and omnibuses are constructed in the form of deep wagons on rubber-tired wheels, so that they may be easily moved about the room, or rolled entirely out of the room if need be. In these large containers the discard materials that are so difficult to store neatly, such as tin cans, boxes, and spools, are ideally cared for and hidden from public view. Scraps of soft wood for building are sorted according to size in a big box; the tools are fitted into their respective places out in the yard, within view of the window, where the teacher can clearly observe her young carpenters at work, and where at the same time the noise will be sufficiently far from the school building.

Is the room artistically attractive and inspiring? Whether or not the room is artistically attractive and inspiring depends upon the point of view from which we are considering it. Is it artistically attractive and inspiring to the child? For it is the child which education aims to attract and inspire. Just how does it do this? The objects of interest attract him by their color, their position, their arrangement, their human interest, and their use. They inspire him to lift his response, and to imitate.

The four walls of the primary room which attract and inspire are not plastered with miscellaneous prints cut from magazine covers and advertisements, often well worn at the corners and sometimes hanging crooked. There is a right place for such temporary interests, and this is the bulletin board, where such novelties are hung for a day or so along with the work of the children. But this type of attraction is transitory, and should be focused to a point in the room not commanding the first glance as you enter the door.

The real art contributions are arranged carefully and lovingly — not crowded, but set off by a pleasing neutral background — and are placed low enough for the child to

THE SUPPLY CLOSETS OF A MODERN PRIMARY ROOM OF THE PLATOON TYPE AT LONG BEACH, CALIFORNIA

see and enjoy fully. The flowers also are thoughtfully handled. The vases may be of the cheapest type, perhaps pickle jars or bottles painted or ornamented, and placed on a sheet of mounting paper in pleasing color contrasts. The vase with its mat stands alone on the shelf or the table, so that we may enjoy the few well-arranged flowers it contains.

If the windows are curtained in unbleached muslin, scrim, cretonne, or tissue paper, the material must be designed in harmony with the spirit, purpose, and type of the room. The curtains must not attract attention to themselves, and they must be kept clean.

3. A modern primary room

With the changing concept of education, as applied to the training of young children, we trace a changing method which has made necessary a change in school architecture. The time has arrived when those who hold the destiny of school planning and building in their power must be educators in the fullest sense of the word. The type of activity which is to be carried on in a room must be taken into account in the building of that room. This is as true of the kitchen in the home as of a high-school chemistry laboratory. Organization, method, and efficient use determine the architecture of a primary unit.

A new type of primary room. This point of view is well exemplified in the type of primary building recently erected in Long Beach, California. Placed between two smaller classrooms is a large activity room. The group of three comprises a primary unit accommodating approximately eighty children, twenty children in each small study room and forty in the activity room. The study rooms are planned, built and equipped for small-group instruction in reading, writing, number work, and similar small-group activities. There are never more than twenty pupils in a study room at one time,

and none of the pupils is seated in the rear doing "busy-work." In the study rooms the activities of the children are constantly under the direct supervision of the teacher. Her attention is not divided between a reciting group and a study group.

Hour	Classroom Group 1 2	Activity Room	Classroom Group 3 4
9:00	English 1 (Reading, Word Drill, Writing, Phonics)	Project 2 4 Work Including Nature Study	English 3 (Reading, Word Drill, Writing, Phonics)
9:50			
10:00	English 2 (Reading, Word Drill, Writing, Phonics)	Project 1 3 Work Including Nature Study	English 4 (Reading, Word Drill, Writing, Phonics)
10:50			
11:00	Reading 1	Table Work 2 4	Language 3
11:20	Language 1	Phys. Educ. 2 4	Reading 3
11:40	Reading 2	Music 1 3	Reading 4
1:00	Language 2	Table Work 1 3	Dramatization 4
1:20	Dramatization 2	Phys. Educ. 1 3	Language 4
1:40	Dramatization 1	Music 2 4	Dramatization 3
Long Beach City Schools		UNIT PROGRAM	

DAILY PROGRAM IN A PLATOON PRIMARY UNIT AT LONG BEACH, CALIFORNIA

Forty children are meanwhile accommodated in the activity room. In this room no technical subjects are taught, and for this reason it is thought that here more children can be placed under the guidance of one teacher than in the study rooms. Here all the manual and art activities are carried on — play, dramatization, music, story, nature study, and projects of all descriptions. At the end of the period twenty children from the activity room go into one

study room, and twenty into the other, while the twenty children in each of the two study rooms come into the activity room for work. The figure on page 20 shows the daily program and the grouping of the children by rooms and types of work in such a school.

Since primary classrooms were formerly built with no thought of the nature of the activities to be carried on in them, it was a simple matter to put windows and doors in place and fill in all additional wall space with blackboards; nor was the idea of running a burlap strip under the ceiling ever challenged. The strip was there, utilized for picture hanging, and it was not a matter of concern that pictures hung so high above the level of children's eyes would not be noticed.

A new theory as to education finding expression. Fortunately for childhood, a changed order is to-day coming to the front; primary teachers are making their demands heard, and builders are carrying them out in many progressive communities. The burlap strip is coming down from its place under the ceiling to a position within the child's world of vision — a foot or so above the baseboard. It is also vying with the blackboard for a portion of its undisputed territory. With the lowering of the burlap strip into the child's vision range, even the clock, that most ancient educational apparatus to be found in all classrooms, along with the American flag, is dropping down into the world of the primary child's vision, where it not only stimulates order and promptness, but becomes the instrument of number manipulation.

So we might go on and discuss the lowering of cupboard and shelves, lockers and windows. The time approaches when committees of those who use the room and those who build it will come together to plan and design it.

With the practice of a new philosophy of education we see the rise of new equipment and supplies accompanying the

new methods, and these changed tools of method demand a new form of housing. Thus modern education finds it quite impossible to house its tools of study in the storage places heretofore provided for materials now obsolete. The old theory of keeping things hidden behind closed doors where children's hands could not reach, and where curiosity and the desire to experiment would not lead, provided cupboards off the schoolroom, lined with shelves running up to the ceiling. Our new theory of education, quite reversing the old philosophy of "touch not, think not," encourages us to exhibit our tools of study on low open shelves, trays, tables, omnibuses, window boxes, and bulletin boards, thus introducing a change in the method of caring for our supplies and equipment.

Making over an old-type room. What has been said regarding the necessity of a changed architecture need not thoroughly dishearten the teacher who finds herself with modern training and equipment in an antiquated classroom. For the encouragement of this teacher let us point out that some of the most ideal room situations are those which have been remodeled from the old, or which have taken on new form in response to the ingenuity and resource of a talented teacher.

In the absence of low, individual supply closets, low boxes were set on end, side by side, and placed under a wall of windows. The boxes were stained by the pupils and curtained in burlap or in flour sacking, which lends itself readily to dyeing and ornamentation. Low screens, marking off interest centers, were made by the pupils out of beaver board, or lath frames were built and covered with burlap or wrapping paper. Omnibuses for blocks and other free-play materials were made by the children out of dry-goods boxes put on wheels with handles, like a wheelbarrow. Burlap was tacked to the back of the piano and the door, forming

bulletin boards. Hanging baskets, made by the children, were hung about the room; the clock and pictures were lowered; the chairs and tables were painted a cheery, attractive color; sand and clay trays were made by the tinner; and pleated tissue-paper curtains were hung on the lower sashes of the windows. Thus the impossible old room took on an atmosphere of comfort and hominess and became a fit environment for children.

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CHAPTER II

WORK CENTERS

1. Meaning of "work centers" — Reorganization of the primary room — Work centers — Making the schoolroom like home — Self-organized groups — Centers promote orderly work — Developing responsibility — The child's incidental learning.
2. Values and dangers of project programs — Two widely divergent forms — Incidental learning may be thorough — Primary work must be individualized — Incidental learning must be purposeful — A typical day in a well-organized primary room — Planning purposeful learning — Dangers in using incidental-learning projects illustrated by reading — A judicious attitude toward project work.

1. Meaning of "work centers"

Reorganization of the primary room. In the first chapter it was shown that the modern primary room is organized on principles that consider the child's nature and interests and needs, while the old-time primary room, with its rows of fixed seats, was the unthinking, simple solution of the problem of administering large groups of children, and of helping the teacher manage the group and keep them in order in the artificial environment into which they were forced, for several hours at a stretch.

The principles involved in this modern reorganization of the primary room are:

1. The child has a variety of interests, and should have an opportunity for a variety of activities.
2. The kind of activity that is natural for the primary child requires a larger freedom than is possible in a desk, or in a room where practically all the space is taken up with desks and seats.
3. The primary child will do better school work in a comfortable, homelike, and artistic environment than in the artificial "schoolroom" of the upper grades.

These principles are applied in the modern primary room by the organization of the child's study and play activities in a variety of work centers.

Work centers. A work center is a unit of space in a classroom where materials and equipment pertaining to the same subject are brought together. We might have, for example, the following:

1. A playhouse corner, composed of a rug, rocker, couch, a trunk of "dress-up" clothes, doll beds, chairs, table, stove, dresser, and similar equipment.
2. A library center, composed of a bookcase, table, chairs, picture books, story books, printing press, charts, and letters.
3. A music center, composed of a piano, drums, tambourines, horseshoes (and nails to play with), bells, clappers, and triangles.
4. A block center, composed of small blocks, large blocks, wheels, boards, roof materials, and such play materials as little toy animals, trains, paper dolls, rugs, and trees, to complete building projects.
5. A physical adjustment center, composed of parallel bars, ropes, trees to climb, vertical and horizontal ladders, slides, barrels, teeters, large and small boxes, soccer ball, chinning bar, and other play apparatus. This, of course, will be part of the outdoor playground.
6. A construction center, composed of tables, chairs, rolls of paper, cloth, scissors, paste, needles and thread, paints, crayons, and similar materials.
7. In some cases provision might be made for a *workshop* with one or several work benches, with a few of the safer woodworking tools, suitable pieces of wood, and nails. Preferably this material will all be stored in a dry-goods box on the children's playground, so that the noisier activities will not interfere with other work that must be done in the room.
8. A museum, or curiosity center, consisting usually of one or several cases in which may be stored objects of natural or scientific interest, such as nests, shells, stones, ores, seed pods, or various raw materials, or such materials at various stages of manufacture.

Making the schoolroom like home. Under the old régime the teacher set about furnishing her room from the standpoint of her personal views on order, convenience, and beauty; under the new system the teacher arranges the room from the standpoint of the child. Materials, equipment, and supplies are accessible to the child, and easy to get and replace. They are where they will suggest possibilities of work and play to him. The old way may have been logical; the new way is certainly more psychological.

The work-center plan acts as an organizer of both pupils' and the teacher's thinking. The materials and equipment are not thought of as individual, separate ideas; instead, the material draws like ideas into a unit and simplifies the mass by correlating similar interests.

This work-center plan is like the home plan, where we find a kitchen center for food preparation, a bedroom center for sleeping and preparing the toilet, and a library center for reading and study. Because this work-center plan patterns after the home and the life of the world, it is all the more valuable as an educational scheme. Such an organization of material and equipment gives the school activity a chance to function normally.

Self-organized groups. The group work in the different centers will often fall naturally into self-organized groups. The work-center plan initiates the natural, unified group system of primary organization. Self-appointed interests divide the children into small working units. Such working units are not based on artificial grouping, but on a psychological division on the basis of capability and talent, and of temporary interests. If the room of a self-organized grade is not arranged in work centers it throws the burden of organizing the groups on the teacher; but, by the installation of this unit plan, the work center organizes these groups through suggestion.

Centers promote orderly work. Through the organization of work centers, noise and confusion are eliminated. A self-organized room should not be a silent place, but by no means should it be a noisy place. We expect to hear an industrious hum of busy voices, laughter, and a song, but yelling, shouting, and shrieking only make for disorganization and license.

And how is it that the work-center plan eliminates noise? By preventing the confusion caused by crossing and recrossing units of work. If a child is engaged in construction work, and must get up and step over a block city, through the doll house and around the drums to get first his paste from the cupboard, then his paper from the shelf and his scissors from the cabinet, inconvenience, disorder, and annoyance are bred. If each child serves as his own center, running hither and yon to organize his play or work materials about him, it makes for as many charged centers as there are children. According to this plan one would be forced to have individual equipment and working compartments to reduce congestion and confusion, which is absurd. The solution of the problem is the work center, which affords cooperative use of the materials and equipment with no "traffic congestion" and noise.

Developing responsibility. The children have a responsibility to the work-center plan, for it is their duty to get what they need in their center, care for it as they use it, and replace it, when they have finished, in good condition. This sharing of responsibility in public ownership comes none too soon to the future citizens of a democracy.

Because of its suggestibility and psychological arrangement, the work center gives a larger range to individual choice-making. The child's choices are the fabric of which he is made; can we afford to lessen or eliminate them?

The child's incidental learning. Much of the child's primary-room learning must be incidental. Perhaps only

in the reading work should we think of having a routine method, a definite program of content, and a reasonably definite average goal of attainment. Most other activities of the room are intended as a background for enlarging concepts, enriching the vocabulary, giving the child new ideas and sound symbols for them, and developing controls and coördinations.

Much of the child's learning is incidental in the earlier grades, and especially in the primary room, because many of the facts and processes, which we formally classify in such subjects as arithmetic, geography, history, and science in the later grades, are found necessary in the play and work activities of the primary room. We cannot begin our organized, logical presentation of such material during the first year, but we must not fail to take advantage of occasions when first steps in such work are naturally demanded by the activities of the child. This theory of incidental learning finds its chief exponents to-day in the advocates of the project method and the project curriculum.

2. Values and dangers of project curriculum

Two widely divergent forms. The new project method has found some of its most enthusiastic exponents among primary teachers. One familiar with the project literature, and one who has visited a number of primary rooms in which the project method is followed, cannot help but be impressed with the fact that there are two widely divergent forms resulting from the movement — one sensible, natural, and educative; the other irresponsible, disorderly, and ridiculous, if not dangerous, from an educational point of view. Both forms take their natural departure from the idea that the primary child should have more free activity, that he is not prepared to learn in the formal, logically organized way laid out for more advanced pupils.

There is a sensible insistence on the facts that psychologists are more clearly showing us, as they advance in child study, that the natural way of learning for the primary child is, not in formal subjects, and by an orderly succession of topics, with a fixed schedule for number work, nature study, and reading, but in and through activities and play. This makes many of the fundamental phases of reading work, practically all of the number work, and of the vocabulary building, as well as all information-getting, incidental learning. Other extremists, however, entirely misinterpret this urge to get away from the formal division of work and the orderly schedule, and the challenge to child activity and learning through play becomes an excuse for letting each child assert his whims, whether such choices result in activities involving real educative experiences or whether they produce confusion and license.

Some of the project-makers, in the more pretentious of the published programs, have made a good natural setting for much valuable learning of this incidental type. Such curriculum revisers, though they are usually tempted to go to extremes, are right, however, in trying to make much of this learning attractive and effective by finding or planning occasions for it in a program of natural child activities. The motivation is far superior to the more formal programs. We can gather many helpful suggestions from some of these elaborate project-programs, though we may not feel that it would be advisable to follow the plan in question as a whole. A more thorough development of such project curricula, carefully planned to include the essentials that were included in the formal course of study, will, no doubt, soon appear.

Incidental learning may be thorough. Activity programs that are intended to teach incidentally must not be allowed to result in fragmentary or repetitious learning experiences. Interests must not be motivated, only to be dulled by repe-

titions. Nor must the child be left at the end of a year or two of such project experiences with many of those elements left untouched which he will need in order to go on with more formal learning. We have not yet reached the stage where we may assume, in the public schools at least, that the pupil is to go on with a continuous program of individual learning by a successive series of projects. Whole elementary schools under private control, with a limited number of children, have been planned on the project program by progressive educators and carried to a successful issue, but the average public school teacher must still make her work fit into a system such as public means can supply.

Incidental learning and project teaching may be thorough if planned from the viewpoint of content, of educational objectives, and of pupil experiences, carefully determined as a first step. It cannot be thorough or efficient if it is allowed to flit about, with a rest here and there, as the child's fancy may demand.

Primary work must be individualized. General age-growth in ability will be apparent in the primary group as a whole, as the children enter school, but individual differences in development due to home environment will be still more striking. Each child has such a mass to learn, and home activities in the conscious or unconscious selection of learning experiences have been so varied, that the range of experience in a primary group will be even greater than the range of ability. One child will have a large knowledge of numbers; another will have only a few primitive facts. One will speak quite perfect English, with a remarkable range in vocabulary; the child from a foreign-speaking home may have his first words to learn. One child may have remarkable control over bodily coördination; another may be quite helpless along these lines, without being in any way defective.

The progressive primary teacher will make provision for a systematic inventory of these individual differences, for all children in the group, during the first weeks. How this is to be done with the aid of standardized tests and other devices, is explained in detail in a later chapter. (See Chapter V, pages 75–118.)

A definite program to meet some of the more outstanding abilities and disabilities must be carefully planned. It is recognized fully that no teacher, under the stress of the large number of children that usually have to be dealt with in public-school work, can hope to deal with even a majority of the individual needs that can be discovered during the first few weeks, but the conscientious teacher will try to meet as many of these needs in an individual way as time and ingenuity permit.

Even though the task of meeting individual needs fully and with every child is quite impossible, no teacher is justified in assuming the unworthy, unprofessional attitude of refusing to learn the individual needs and meeting as many as can be met. Such indifference results in the aimless mass teaching that has justified some of the severe criticisms recently directed at public-school methods. We must individualize our instruction as much as possible, even though psychologists and testing experts, in their devices for revealing individual differences, have gone far beyond what even the best teacher can apply in a class of average size. As classes proceed through school, extremes are more and more eliminated and groups are more and more equalized. The individual differences are greatest in the first year; the need for individual attention is, therefore, more apparent and more imperative in primary work than in any other grade of the school.

This individualizing of instruction is most significant in connection with the incidental learning of the primary

grades. In the matter of reading, most children confront the same general problem but in the incidental learning the range of needs will be considerable, and the program must be planned most carefully with reference to such needs. The child, for example, who is backward in physical coördinations of hand or body will try to avoid certain games and construction work — just the type of activity he most needs. The teacher's plan must be directed consciously toward that particular need for that particular child.

Incidental learning must be purposeful. All incidental work in the primary grade should be purposeful, from the point of view both of the teacher and of the child. This principle is laid down as a contrast to the attitude usually assumed in connection with so-called "busy-work." The conventional division of a primary class into two groups, one engaged in spool knitting or some other typical construction activity merely to keep them occupied while the other group is being given a lesson in reading or other formal instruction, is open to serious criticism. Keeping the children busy merely to keep them orderly may be highly inefficient and wasteful.

Only such work as has clear educative values can be justified, even for such children as do not engage the teacher's immediate attention. The purposefulness of much of the child's informal work can be determined only by his individual needs. Further, much of this type of work must also serve some conscious purpose of the child himself, if it is to challenge his interest and effort. It may not be some inane task.

A typical day in a well-organized primary room. How this purposefulness may be promoted by the organization of the primary room into such work centers as call forth a child's spontaneous interests and activities may be shown by a description of a typical day in such a room. A morn-

ing session of a first-grade room in a city school well illustrates the story of a day in the work centers.

It is 7.30 o'clock [1] and, before the arrival of the teacher, we see child representatives from many nations trooping into the classroom. They seem happy and bent upon some task, as they call to each other or describe what awaits them inside. Wraps off in no time, we see them open a series of closets which border the wall beside the long row of tables used for manual work. All that they need for their work is close at hand in the closets. Paper, paste, and scissors for the children who are making valentines; needles, thread, materials, and patterns for the little girls who are sewing doll dresses; tin cans, enamel, spools, nails, and hammers for the boys who are finishing their trains; and crayons, cardboard, cans, and string for those who are making drums for the soldier parade on George Washington's birthday.

By this time the teacher has arrived, and is being consulted concerning means and methods of carrying out the many problems of the manual center. Some work must be done over, some pupils must be reminded of standards of value, and some must be helped who are puzzling over word problems encountered in the printed instructions to be found on the outside of the envelopes in which handwork patterns are filed.

At 9 o'clock the bell rings for the full-day session pupils of the other grades to come in; it serves also as a signal for reading group I, to find the books they are using and to bring them to the reading center. Most of the pupils in the construction center have finished their tasks, or are ready to put their work away, clean up, and go to something else. The girls with their newly dressed dolls go to the doll center, the boys with their new trains to the block center, and the

[1] This is in a half-day session room.

19644

drummers to the music center, where they put on a phonograph record and practice keeping time to it.

In the doll corner, beds are to be made, clothes washed, the house swept, babies sung to sleep, and later taken out for a walk at recess.

In the block center the boys with trains are very busy. Some are drawing rails on the floor with rulers and chalk, measuring often to keep them the proper distance apart. Some are building tunnels over the tracks and stations en route. Two boys have left the block center and are printing a "stop-look-listen" sign at the reading center, while others have gone back to the construction center where they are making railroad signals and coloring them. As some finish reading in group I, they join the engineers and set about building towns and villages along the path of the interurban.

The youngest children, who do not remain so long at any single choice, are passing back and forth from one type of manipulation work to another. In this center we notice the clay trays, sand table, blackboards, and large easels fitted with wrapping paper for drawing with enlarged kindergarten crayons.

Other groups have had their reading and from it have passed on to the browsing table, which is in the reading center along with the printing press, charts, reading games, and tests. One child is duplicating a chart with large phrase cards used on the floor; another is printing the news items for the daily bulletin; another is following printed instructions in drawing a picture. A group is engaged in playing word-and-phrase matching and sorting games, and others are reading voluntarily from books of their own choice.

Let us follow the lad who has finished editing the daily news, and has gone to a corner of the room to watch a group of playmates who are playing a bean-bag game and keeping their score on the blackboard. Some in this number center

are playing ring toss, some dominoes, some a game much like parchesi, and some are going through a file of forty number games arranged, according to difficulty, in envelopes, each numbered, and with instructions for playing printed on the outside. The young editor has just finished playing number fourteen, has checked his answer to prove its correctness, and is now making a record of his accomplishment on the wall graph.

After recess the drummers are again gathered about the phonograph, but this time others are added to their number and a group of ten or more are assembled in the music center, some with tambourines, others with sandpaper blocks, one with a triangle, and some with horseshoes played upon with metal pins. After the band music, the group begins singing soldier and flag songs, and soon all in the room are taking part.

The songs soon lead into games and dramatic plays in which the room as a whole takes part, with all tables and chairs pushed against the side walls, converting all free space in the room into a dramatic or game center.

Thus the work in a modern primary room continues until the hour for dismissal for the day comes.

Planning purposeful learning. The work-center plan that has been described in this chapter is one of the best means of organizing primary work for such purposeful, incidental, and individualized learning.

In this connection it may be pointed out that the progressive primary teacher will do well to effect a thoughtful compromise between old practices and the present extreme agitation for a radical reorganization along the lines advocated by the project enthusiasts. A superior motivation for much of the primary work may be secured by the project or activity programs now commonly advocated. In such project or activity curricula the possibilities of inciden-

tal learning have been fully exploited, and may be freely utilized in planning primary work so as to make it purposeful.

Dangers in using incidental-learning projects illustrated by reading. In primary projects, however, all learning is too often made incidental. The schemes are often carried to the extreme of making all the learning of reading in the primary grade, and of other subjects in the more advanced grades, incidental to such project activities.

The danger of this procedure of abandoning all the conventional "subjects," as such, may be illustrated here in the case of reading, the one paramount subject for the primary grade. If the systematic, formal instruction necessary to teach beginners reading is made entirely incidental to the other typical activities made possible in a reorganized room, with its varied equipment in the several work centers, there is not only the possibility, but the almost absolute certainty that learning to read will be accidental instead of incidental. Or, even if we felt quite certain that all children would ultimately learn to read in connection with a series of activity projects, this purely incidental method nevertheless would be highly inefficient. Further, if we should even have to admit that such learning of reading, incidental to an activity program, would motivate a more natural interest in, and a more practical realization of, the value and importance of the art of reading, and though we might prefer such a motivation for an individual child, we cannot lose sight of the fact that in the public school the teacher has to do what she can for all *of a class* and *in a class*. Any one teaching reading to one's own child, or to a very small group, might wisely plan the teaching of reading as incidental to a series of purposeful projects, but, until the public funds provide for such highly individualized instruction, such schemes are far from feasible.

A judicious attitude toward project work. Writers advocating such project work on the basis of normal school or university training-school experiments, or on the basis of remarkable experiences with individual pupils, or as witnessed in expensive private schools, are unfair in their criticism of public-school methods or results, and are unwise in their challenge to unadjusted imitation. The public-school teacher will, therefore, be judicious in her attitude toward such projects. She may adapt, but cannot adopt them outright. In the teaching of reading in the primary grades, for example, she will recognize that there are some feasible projects, and that her formal class work in reading may be wisely reënforced and extended and applied as incidental to other activities in the work centers. She will not forget, however, that formal work with the "subject" of reading, as such, cannot be abandoned.

CHAPTER III

EQUIPMENT AND SUPPLIES

1. Suggested equipment for progressive primary education — Minimum equipment — Generous equipment — Educative toys — Materials for acquiring skill — Conservative and progressive equipment.

THE physical arrangement of a primary room into such work centers as were described in the previous chapter involves clearing the room of the fixed desks and providing certain necessary furniture, equipment, and supplies.

Minimum and generous equipment. This problem has been solved in a most creditable way in a report made, in 1923, to the National Primary Council by its Committee on Furnishings and Equipment. This report gives a detailed list of suggested equipment for progressive education and covers the first three grades of school work. The list is divided into two general sections:

I. Minimum Equipment
II. Generous Equipment

The latter gives a list of permanent furniture and furnishings for work suggested as desirable, in addition to the Minimum Equipment named in section I.

The list of minimum equipment is differentiated into two general groups:

A. For teachers not trained in informal procedure
B. For teachers trained in project procedure

The list of equipment as suggested by the committee of the National Primary Council follows, with occasional slight modifications:

Suggested Equipment for Progressive Education

Grades 1, 2, 3

I. *Minimum Equipment:* Materials and furnishing to set the situation:

A. For teachers not trained in informal procedure

a. Permanent furniture

1. Available floor space, one side of room
2. Work table
3. Reading-table
4. Twelve small chairs, six at each table
5. Cupboard space for supplies
6. Sand table, deep, wide, low, lined with zinc to hold water
7. Teacher's desk
8. American flag
9. One beautiful and appropriate picture
10. Drop-leaf work shelves, long, low, total length 30 feet by 18 inches. (Not under blackboards.)
11. Low blackboards
12. Graphophone

b. Furnishings for work: Choose such materials as are practical from B, *b*. (Note: Informal furnishings do not constitute informal work. Material brought in by children will help set an informal situation.)

B. For teachers trained in project procedure

a. Permanent furniture

1. See A under I, items 1, 5, 6, 7, 8, 9, 10, 11
2. Tables, wide, low, of different heights, light, sufficient to seat all children
3. Small chairs, one for each child. (In third grade half tables and cupboards and half movable desks.)
4. Individual cupboards, one for each child in place of desks. (May be made by children in grade three from boxes. This shelf to be below 4 feet. Compartments $12 \times 14 \times 9$ inches.)
5. Material cupboards accessible to children
6. Workbench — large box or sawhorses and board
7. Graphophone

b. Furnishings for work

1. Fair-sized doll, unbreakable

2. Manila chart paper, tag board, 18 × 24 inches, 8 × 12 inches
3. Newspaper (unprinted), 100 sheets 8 × 18 inches, and 24 × 36 inches
4. Construction paper in colors
5. Wrapping paper, large roll
6. Corrugated paper. (May be saved from book parcels.)
7. Old magazines and pictures brought by children
8. Paste, 1 jar per room
9. Crayola, 1 box per child per term
10. Large lead pencils
11. Rulers
12. Yardsticks
13. Supplementary readers (2 sets)[1]
14. Many single copies of various books
15. Letter, number, and work cards for building
16. One large printing press, 1-inch type
17. Clay, and jar for keeping it moist
18. Scissors, 1 pair per child
19. Needles and thread, and scraps of cloth brought by children
20. Looms. (May be made out of pasteboard.)
21. Weaving needles. (Are beginning to pass out of use.)
22. Paper dolls, brought or dressed by children
23. Scraps of soft wood, secured at planing mill in form of blocks, boards, and strips
24. Small strong saws (2), keyhole saw, cross-cut saw, coping saw
25. Small, large-headed hammers (6)
26. Nails, varying sizes; tacks
27. One vise
28. One screw driver
29. One mitre box of wood (homemade)

II. *Generous Equipment* (in addition to Minimum Equipment, given above)

[1] The use of supplementary readers in complete sets is rapidly passing in the more progressive school systems.

a. Permanent furniture

1. Large light room, with plenty of space
2. Generous cupboard space
3. True or mock fireplace
4. Cork linoleum
5. Bulletin board, or combination of screen, bulletin, and blackboard
6. Low window-seat boxes made to hold materials (opening at the side)
7. Trucks for storing blocks, lumber, etc.
8. Toilet lavatory, soap, and towels
9. Swinging display-boards, 96 square feet, or four to six leaves
10. Open bookshelves
11. Sand trays (2), 24 × 36 × 6 inches, on casters
12. Zinc trays for window sills or window boxes, and feeding-trays for birds
13. Good, appropriate, framed pictures for walls
14. Filing drawers for teacher for samples of work, reports, etc.
15. Mirror
16. Graphophone
17. Piano
18. Typewriter
19. Radiopticon
20. Reflectoscope
21. Stereoscope
22. Indoor-play equipment

Running-board	Rocking-board, long
Swing	Swinging-rings
Pole in door (broomstick)	Climbing-rope

b. Furnishings for work

1. See B, *b*
2. Good collection of story and picture books; readers (single copies) for individual and library reading; old books and magazines, for cutting-up purposes
3. Wild animal stamp primer
4. Cards, large perception, seat cards (picture and word matching), phrase cards, phonic cards. (Commercial sets are published to accompany most of the recent reading methods.)

5. Charts, chart racks
6. Educational reading games
7. Printing presses
8. Bogus paper 12 × 14 inches (for homemade charts of phrases and words)
9. Sign marker, with half-inch capitals
10. Rubber-type outfit
11. One-inch rubber-set brush
12. Multiple perforator
13. Tools as needed

Workbench with vise	Three try squares
Mitre box	Sloyd knife
Two small planes	Nails (assorted)
Two hand saws	Brass rings (1 box)
Two keyhole saws	Glue (1 pint)
Two coping saws	Sandpaper (assorted)
Brace and auger bits	Soft wood
Six hammers	Corrugated pasteboard

14. Other supplies:

Paint in cans (blue, brown, red, green, black)
Small spools and cones (from stores — especially five-and-ten-cent stores)
Paste cups and sticks (slats cut in half)

Paint cups	Hailman beads 470 D
Paste, quart for class of 25	Dolls, large and small; jointed, paper
Gold and silver paper	Borders of wall paper
Black camera paper	Aquarium

15. Picture and postcard enlarging machine
16. Rocking-chair ("welcome chair") for mothers

Toys. The following list of toys and other materials has been approved by a committee of kindergarten and primary teachers, of Fort Wayne, Indiana:

Pull-apart-animals circus
Animal stencils and paints
Ideal speller
Zoo puzzle box
Cinderella puzzle box
Little Red Riding Hood puzzle box

Mother Goose puzzle box
Pollyanna Doll clothes set
Red Bird color kit
Wayside Inn puzzle
Stampcraft:
  Andersen fairy tales
  Cinderella
  American history
  Mother Goose
  Robinson Crusoe
  United States travel
  Farmyard friends
  Japan
  Alice in Wonderland
Peter Rabbit color box
Set of tin cooking utensils
Sunbonnet Babies color box
Set of ten pins
Set of tin dishes
Rabbit and rings
Pictorial lotto
Alphabetical lotto
Numerical lotto
Set of numerical cubes (large)
New United States maps cubes (small)
Peter Pan water colors
Kroma painting outfit
Tyro blocks (large; also small)
Stand-art outfit
Educational board
Hoy-toys
Kindergarten beads
Kindergarten color kit
Wonder speller
Wonder multiplication table
Bird wonder speller
"Alphies"
Rainbow blocks
Flower game
Happy Jack circus
Plasticine outfit

Round-cornered toy blocks (large and small)
Reversible educational blocks
Small looms (12)
Rug yarn, cotton roving assorted colors, carpet warp, candle wick
Tinted folding and cutting papers
Manila drawing paper, cream and gray
Raffia — raffia needles
Congo reed
Nu reed
Cross section paper $\frac{1}{2} \times \frac{1}{2}$ inch
Dennison's crêpe paper (all colors)
Sansilk (assorted colors), 1 ball of each
Charcoal
Water colors, paints, and brushes
Water-color paper
Clay, 100 pounds
Jar for clay
Clay knives
Flower wire
Paper fasteners
Scissors, 25 pairs
Foot rules, 1 per child
Pencils, larger diameter
Colored crayons, larger size
Toy play-corner equipment
  a. Toy broom, iron, stove, table, chairs (4), dishes, dustpan, and doll carriage
  b. Sewing outfit, needles, thread, thimbles
Rug
Balloons
Balls, large and small (6 in all); soccer ball
Baskets for flowers
Transportation toys
Table books
Floor blocks
Low benches for play purposes
Erectors
Toy money
Parish number-work cards
Self-keyed number word-cards (grade 3)
Dominoes

Tenpins
Ring toss
Shuffle board (made by Manual Training Department)
Grocery store
Self-verifying seat work
Musical instruments (toy): triangle (horseshoe and long nail), drum (oatmeal-box top)
Regular toys when possible

For those familiar with child life and child interests, the justification for suggesting the provision of a large variety of toys in the primary rooms is not hard to give. One of the best justifications for toys, from the educator's point of view, was given by the Bureau of Educational Experiments, in Bulletin no. 1, 1917, in the following words:

Toys — real toys — are the tools of play. And since play is serious business for children, these tools must be selected with serious intent. The requisite for toys is that they must be efficient as toys. That is, they should be suggestive of play and made for play. They should be selected in relation to each other, both in size and in kind. They should be consistent with the environment of the child who is to use them. They should be constructed simply, so that they may serve as models for other toys to be constructed by the children. They should suggest something besides domestic play, so that the child's interests may be led to activities outside the homelife. They should be durable, because they are the realities in a child's world and deserve the dignity of good workmanship.

Toys of this sort may obviously form an equipment for a child's laboratory, and anything which answers these requirements becomes in this sense a toy — a tool for play.

Materials for acquiring skill. Materials to be used for acquiring skill should be printed on thin paper in the school print-shop, or may be had from any printer.

1. Alphabet sheets, Aa, Bb, Cc, etc.
2. Alphabet sheet, capitals A, B, C, etc.
3. Alphabet sheets, small letters a, b, c, etc.

4. Word sheets — necessary vocabulary for grades 1B, 1A, 2B
5. Phonetic sheets, grades 1A, 2B, 2A
6. Nursery rhyme sheets 1B, 1A
7. List of nouns to illustrate
8. Number sheets, 0–10
9. Supplementary material sent out by many publishing firms
10. Reading games, number games, and hand-craft helps published by school-supply companies
11. National Council of Primary Education Bulletin, December, 1922, vol. VI, no. 2
12. Bulletin, 1921, no. 13, U.S. Bureau of Education, Department of the Interior, Washington, D.C., on *The Housing and Equipment of Kindergartens*

Conservative and progressive equipment. There are two kinds of equipment, conservative and progressive. It is advisable that such a distinction be drawn between educational tools placed in the hands of teachers trained conservatively and those given to teachers trained progressively. Conservative training, methods, room arrangement, and activities call for conservative equipment, and it is safest if those trained in this fashion prove every step of the way in changing over to the use of the informal type of equipment, lest license and disorder result.

If there is to be a change from formal to informal methods and materials, it should be by a very gradual breaking away from the old, accepting only that which has been proved better than that which is being discarded. A single new conviction with regard to a point of procedure, carried into the different phases of practice, will grow in ever-widening circles to include all the work of the grade, and thus, through this gradual growth in the line of change, the evolution will be constructive and orderly.

PART II
THE CHILD AND THE TEACHER

CHAPTER IV

THE KINDERGARTEN-PRIMARY CHILD

1. Place of home experiences in the child's development — The child's pre-primary experiences — The average home as an educative agency — Freedom of movement — Natural curiosity satisfied — Sympathetic supervision — Enriched environment — Wide range of social experiences.
2. Relation of the school to the home — Supplementary function of the school — With what does the child come to school? — Physical and mental equipment — Fixed habits — The language stage in the school period — The language problem in the school — Wrong number habits — The child's attitudes and interests — The child's stock of ideas.
3. Place of the kindergarten in the child's development — Indifferent or hostile attitude toward the kindergarten — Certain theoretical objections.
4. The educational value of the kindergarten — Systematic training in muscular coördination — Two distinct groups — Promotes social adjustment — Develops academic curiosity and interests — Freedom of expression and activity promoted — Prepares for the work in beginning reading — General preparatory value of the kindergarten — How the gap is being closed.

Selected references.

When the child comes to the primary room, at five or six years of age, it is possible to make a fairly thorough analysis of his general nature, his individual ability, and his individual attainments. It is possible to sum up these several elements, especially from the point of view of estimating his nature and his needs as related to the educational problem he presents. It must be understood clearly, however, that, while such an analysis for teaching purposes is possible, it is not possible — nor, fortunately is it necessary — to trace the various elements of what he is to the respective sources of heredity and environment. We can say what the child is, but we cannot always tell just what elements in his nature

and his abilities are the product of heredity, and what elements have been developed by his experience.

1. Place of home experiences in the child's development

The child's pre-primary experiences. In a general way, though, we can say that with practically all children this personality is largely the product of home training and experience. With a number of children we also have to recognize the fact that their habits, abilities, and interests have been largely influenced by a preliminary school experience in the kindergarten.

It is unfortunate that too largely the activities of the primary room have been determined by a consideration of the child's future educational career, rather than by a consideration of his past educational experience. His treatment in the first grade has been too largely a question of how he may be fitted for his succeeding school work. It would be more helpful if some thought were given to the question, "What sort of educative experience has he been fitted for?" The answer to this question is largely to be determined by three factors:

1. What native abilities has the child?
2. What has he learned from his home training and experience?
3. If he has been in kindergarten, what effect has this experience probably had on his learning attitudes and capacities?

The first of these questions is altogether an individual matter which can and should be definitely investigated by the use of standard intelligence tests. This will be discussed later (Chapter V, pages 75 to 118) in connection with the child's first week in school.

In this chapter an attempt will be made to show the relationship of the child's home experience to his work in the primary grade, and the relation of a typical kindergarten experience to the child's primary-room work.

The average home as an educative agency. It would be quite impossible to describe the average home from a concrete point of view. The house and its furnishings; the character of the parents, from the point of view of economic and educational standards; the typical situation with reference to the number of brothers and sisters; and similar concrete elements might possibly be made a matter of statistical computation, but such data would have little value for our purpose.

It is quite possible, however, to formulate an estimate in the abstract of what the average home means in an educational way to the average child. Whether the child lives in the city or the country, in luxury or in poverty, in a home of culture or one of sordid ignorance, he has been treated in a more or less typical way, so far as the method of his mental and social development is concerned; and it is also possible to determine quite accurately what this pre-school experience has netted him. Before he comes to school, the normal child has been treated in a way that has, on the one hand, fitted him for the work of the school, and has at the same time made an adjustment to that new environment irksome if not cruel. In what spirit, and by what method has he been trained during those first five or six years? What are some of the characteristics of this early home training?

1. Freedom of movement. In his home the child has been allowed almost perfect freedom of movement. With very few exceptions this movement has been practically unlimited. He lies down, sits up, or stands as he may wish, and in pursuance of any purpose that comes into his mind. No one interposes to suggest that the light would be better in this corner or that for his block building, nor is any alarm felt if the light does not fall over the proper shoulder. When he tires of one type of activity his inner urge stops him, and energy or relaxation is directed into other channels. In

order that he may have safe and free movement in the open air, the porch steps are barricaded, rails are heightened or strengthened, or the yard is fenced in. Within doors the run of the house is his, and he is free to enter and explore at will. If dangerous objects beset his path they, and not the child, are enclosed.

As he grows older his explorations are extended beyond the home and the home yard. In some locations parents prohibit some excursions, and warn against crossing streets, but by the time the child comes to school he has practically outgrown such warnings and usually has acquired quite an independence in his wanderings.

2. Natural curiosity satisfied. During this pre-school period the child has been indulged in the privilege of satisfying his natural and acquired curiosity. Most of his numberless questions are answered; many are given thoughtful consideration. Sums of money are spent for books to aid parents in answering these questions more intelligently. Not only are his verbal questions answered, but his questioning taste is satisfied by sampling food dainties and culinary trimmings. Even the ears seem almost superhuman in their ability to interpret secrets and tune in on adult wave lengths.

In his first creeping exploration he discovers the cooking utensils, and forthwith the pie tins and lids are put on a lower shelf, henceforth to become his instruments of music. Objects that are ill-suited for infant examination are put up out of reach. For months and years dressers and tables must go without scarfs, and things that dangle suggestively within his reach are put behind locked doors until a later age, when manipulative curiosity can be satisfied visually, and with greater safety to both treasure and child.

3. Sympathetic supervision. In this period of freedom and curiosity-satisfying activity, the child has been assisted and directed by an interested, sympathetic supervision. He has

been dressed and aided in the putting on of coats and rubbers; knots and bows have been tied; buttons fastened; umbrellas raised; dolls dressed; popguns loaded; and, in all the play and work activities, mother, grandparent, sister, or brother acts as first assistant. In the multitude of activities, including holding his spoon, climbing the stairs, or riding his coaster, his first assistant patiently shows and explains, then suggests and aids as he tries and tries and tries. Not only is he assisted and directed in his activities, but he is protected and guarded as well. Sharp and pointed instruments are well out of reach, hot things are guarded, poisonous things are hidden, sharp corners are padded, and steep stairs are barricaded. In partnership with members of his family he enjoys his books and games. They teach him the rules, while they show and tell and participate with him. So we find the pre-school environment of the child as a stage set specially to accommodate his rôle as leading actor.

4. Enriched environment. In the home the child has been supplied with a more or less sympathetically enriched environment. Many are the sacrifices of fond parents as they make provision for the environment of their children. Hotels, apartments, flats, and courts are given up so that the children may have more play space, open air, ground to dig in, trees to climb and swing from, and appropriate neighborhood playmates. Toys of all kinds are provided to give joy and stimulus to this play world. This enrichment goes on even beyond the boundary of the home. The child is taken to the park, the circus, the parade, the toy shop, the pageant, and the show in order that his contact with life may be broader and his chances to compete with his social group more advantageous. Such special entertainment is not always provided from educational motives, but these amusements and recreational excursions have the educative value, whatever their motive may be.

5. Wide range of social experiences. All through this pre-school period the child has come into contact with quite a wide range of social experiences. This knowledge he has gained both directly, through family, relative, neighbor, playmate, and tradesman; and indirectly, through books, conversation, pictures, and shows. He has participated in the experiences of his immediate family as its daily round of duties are attended to. These experiences have been broadened as they have taken in the relatives close by or at some distance, which made travel necessary and involved exposure to new surroundings and manner of living. Passing in and out of the homes of playmate or neighbor, the child has added to his storehouse of social contacts. Lastly, as he has gone into the world of business, with parent or relative, he has witnessed the scenes of the street with their story of hurried life, trade, commerce, transportation, invention, and parade of nationalities. As he has been led into the workshop, factory, library, theater, restaurant, and department store, he has viewed this same life drama being enacted in another setting.

2. Relation of the school to the home

Supplementary function of the school. In view of these pre-school attainments of the child in his home, it should be evident that the school should consider what has been learned, and what the spirit and method of this home learning has been, in order that there may not be too violent a readjustment, in order that advantage may be taken of the child's attainments, and in order that the new work in school may proceed progressively in the child's development without needless repetition or without unfortunate breaks. It should be evident that the school should make some thorough and systematic preliminary effort to find out what each child comes to school with in the way of endowment and

experience. This must be done in order that the school may start where the home leaves off.

The school must realize that its real educative function is largely supplementary, that the home and neighborhood associates and environment have already gone far in moulding the child before he comes to school, and are going to continue their educative activities, for better or for worse. In view of this the few hours of school experience must be so planned as to challenge the child's heartiest effort and coöperation. Such effort must meet with a broader and newer environment than is found in the average home. This environment must offer educative stimulation equal to that of the best homes — the best from the point of view of educative experiences, not of wealth or social standing.

In this connection, to show the purely supplementary function of the school in the development of the child, it may be well to note some of the results of the earlier home training, and some of the influences that are to be exerted parallel to those of the school after the child has enrolled.

With what does the child come to school? Most of us are inclined to give the school credit or blame for a much larger place in the child's education than is actually the case. Most children are not in school more than five hours of each day, five days a week at most, and in only a few States as much as forty weeks of the year. If we deduct nine hours of each day for sleep, that means a child is in school only one-third of his waking time each day for less than one half of the days of each year. The compulsory laws require him, then, in States having the most progressive compulsory-attendance legislation, to spend one sixth of his time in school each year for about ten years. It would be a fair statement if we said that, for the country as a whole, the average child could get in all of his schooling in one year or a year and a half, if he went home only to sleep.

We must, however, recognize further conditions which modify this period still more. In the first place, the child does not come to school at all until he is five or six years old — he is under the control and direction of parents and other associates during the most important early years of his life. In the second place, all during his school life he is under the influence of out-of-school associates, in his home and community, twice as much of the time each day as he is under the influence of the school. Let us consider in some detail these out-of-school influences and their probable contributions to the child's learning experiences.

What does the child, at the age of five or six, come to school with?

Physical and mental equipment. He comes, first and most important of all, with a certain inherited physical and mental equipment — ability or disability as the case may be. It is only since the World War that the schools have recognized clearly the importance of this physical ability, and the child's needs along this line.

The child's inherited mental ability, his *intelligence*, is the chief educational tool, or rather the foundation on which the whole learning structure must be built. In the last fifteen years educational psychologists have made some remarkable and staggering discoveries about the child's inherited intelligence. In this connection only a few of their most important conclusions need be stated:

1. Psychologists claim that the learning development of human beings is from 60 to 90 per cent a matter of inherited ability, as against the influence of environment. That involves:
2. That the intelligence, or mental ability or disability, cannot be increased. No amount of schooling can make a feeble-minded child normal; no course of training can make an average mind superior.
3. This inherited mental ability covers a far wider range than we used to imagine.

Some children, because of their inherited brain power, can do three or four or twenty times as much as others in the same time, or the same amount of work in a small fraction of the time it takes others to do it. Because of their inborn superiority, the brightest children in almost every ordinary schoolroom can read four pages while the dullest read one.

Fixed habits. In addition to this inborn mental ability, in its fixed measure, the child comes to school with a whole bundle of fixed habits, learned during those first five or six years, all of which will largely affect all his social relationships. It is true that he has usually not acquired any habits in arithmetic, or reading, or spelling, or writing, or geography, but we may take a single illustration of important habits that he has formed which will greatly affect all of his school work. He has learned his speech habits, and these speech habits will affect his reading, his composition, his spelling very often, and his reading, in turn, will affect nearly all the rest of his school work.

The language stage in the school period. Our first problem, so far as teaching language in the schools is concerned, arises from the fact that we get the child at the second stage in the language-learning process, that is, after parents and early associates have had a large influence in this early period of habit fixation. This is no inconsiderable period, when we consider that it extends from the earliest days of infant prattle to the age of five or six.

In this connection we may also point out what the child continues to learn outside of school, all during his school years, in addition to this important start given him for better or worse in the pre-school period. His language learning may again be taken as an illustration.

The language problem in the school. It will be apparent upon brief reflection, and it is painfully evident from a brief

experience in the schoolroom, that the "customary" language of the home not only has a three years' or four years' start of the school, but also continues to exert, far into adolescence, a parallel influence with that of the teacher. For the sake of the comparison we may designate the teacher as the conventional or correct influence, at least in all those cases where the home is not of an equal or superior standard as compared with the standards of the school. Besides, the school standard has also to compete with the influence of the child's playmates. These also usually express the same "customary" influence of similar parents and homes in any community. Therefore we have a struggle for the child's language forms as between the "custom" represented by the parents, and the "convention" represented by the teachers. The tragic force of this struggle between conflicting language models and conflicting language habits is one of the sources of unfair criticism of the school.

If there were time we might show how the child's play environment, especially his associates, have as great a share in his education as the school or the home in manners and morals. Much of this influence is exerted in the way of fixing old habits, good or bad, and of building attitudes toward life that have a determining part in his development.

With reference to the child's speech habits, as well as in a variety of other connections, the primary teacher must learn to make a careful inventory of the child's attainments and his shortcomings. She must realize that along most lines, reading alone excepted, her education of the child must largely continue and correct this pre-school learning. The school must be thought of as principally intended to supplement and correct the learning that goes on in the child's out-of-school life. With reference to the matter of speech habits, for example, her motive must always be this supplementing and corrective work. She must always have re-

gard, much more regard, for the child's past gains and failures in speech than for the preparation for some possible, imaginary future use, especially some possible preparatory academic demand. She must try to counteract bad speech habits already acquired or in the making, rather than provide training in technical grammar to prepare him for foreign-language study in high school or college.

Wrong number habits. It might be shown that in his preschool experience the child also often gets improper ideas of numbers. Thorndike has shown how the child comes to use 2, 3, 4, etc., for second, third, fourth. This is because "he sees or hears his parents or older children . . . count pennies . . . by saying one, two, three, and so on." Similarly, in the matter of numbers, the child "also gets the habit, not necessarily bad, but often indirectly so, of using many names, such as eight, nine, ten, eleven, fifteen, a hundred, a million, without any meaning." [1]

The child's attitudes and interests. In addition to such physical and mental habits, the child has acquired a personality that will greatly affect his school work. This lies largely in the field of the emotional and volitional life, and may perhaps best be expressed in terms of attitudes and interests. The child at six has fears and inhibitions, prejudices and dislikes which may seriously interfere with his school work, or with some particular phase of it. In the same way he may have gained self-confidence and desires which may lead him to excel in some work or in all. Such helpful or harmful feelings and emotions may actually discount or overcome native intellectual ability. A very bright child may be inhibited to an extent that will rate him below the average in achievement, while some child with only average intelligence, because of such qualities as persistence,

[1] From Thorndike, E. L.: *Psychology of Arithmetic*, p. 206. Reprinted by permission of The Macmillan Co., publishers.

pride of workmanship, or desire to excel may lead the class in one or another activity, or even in all.

How these emotional qualities, sometimes desirable and sometimes undesirable, are acquired cannot as yet be determined with sufficient accuracy to offer a satisfactory program for either diagnosis or control. Some of these qualities may be elements of inborn temperament. A placid, docile child may be such in large part by birth; he may be such by virtue of six years of contact with parents who have subtly and unconsciously built that quality into his personality. How extensive such an influence can be may be seen in the reactions of individual children to the personality of different teachers. One teacher inspires easy confidence, another embarassed reticence, a third sullen withdrawal, while a fourth may provoke to lawless or insolent defiance. With another child the reactions to the same personalities may not be the same at all. With children, as with adults, one who is generally talkative may become reticent with some particular person; one who is generally placid may be irritated to exasperation by some person who does not usually affect others so.

The child's stock of ideas. The stock of ideas the child comes with to school is perhaps as variable a factor as the range of intelligence and the variations in attitudes. The ideas a child has can be accounted for largely by two factors — his range of experience and his native mental ability. Studies of twins have shown that the inventory of ideas acquired by two children of almost identical experience will vary as their relative intelligence. The child with an intelligence quotient of 100, who has been brought up in an illiterate home and a drab neighborhood, will show not only a different but a much more limited stock of ideas when compared with other children of average intelligence coming from well-to-do parents and cultured homes.

Economic conditions and their effects will also reveal themselves as a considerable factor in determining the variety of experiences and the consequent stock of ideas that a child has when he comes to school. A child of six who has never been to a circus or a museum, or who has never traveled or made a visit to a large department store, is naturally much more limited in the stock of ideas he has accumulated before he comes to school than a child who has had such experiences. A child who has lived his first six years with parents, brothers and sisters, and playmates whose conversation ranges over a wide field of interests, must necessarily have absorbed a host of ideas by context which have never come to the ear of one brought up under more restricted conditions. A child of six brought up in the tropics, with ignorant parents who have never been in any other part of the world, naturally would not have in his stock of ideas such words as *snow*, *ice*, *skates*, and *sled*. If picture books did not supply an approximation of the ideas, these words would be entirely lacking in the child's vocabulary. All these pre-primary limitations and experiences modify materially the work of the primary teacher with the child.

3. Place of the kindergarten in the child's development

Some children, living in favored communities, get much of this enriched social experience in the preparatory development afforded by the kindergarten. The materials and methods of Froebel, directed by specially trained teachers, have become an important part of the educative influences provided by progressive American communities. The place and value of such training as is given in the typical kindergarten, as a preparation supplementary to the home, should be understood clearly by the primary teacher. The relation of kindergarten work to primary work is one of the great problems of elementary education, and an understand-

ing of this relation is one of the essentials for success in primary teaching in such schools as provide the preliminary kindergarten experience. The kindergarten idea is constantly growing, and the institution is in favor with most progressive educators. Not only is the number of kindergartens rapidly increasing, but an allied movement, the nursery school, is extending similar organized training to children of from three to five years of age as well.

Indifferent or hostile attitudes toward kindergarten. The relation of the kindergarten to later school work, especially the work of the first grade, has been a matter of unfortunate controversy. In general, administrators, kindergarteners, and primary teachers have been most interested in this problem. It is not in place here to present the arguments or to judge the merits of this controversy, but rather to explain the reasons for the discussion, to show the values that have been realized for the child by some of the characteristic activities of the kindergarten at its best, to point out the lines that are being followed to make a needed adjustment between the kindergarten and the more formal work of the grades, and to point out how this adjustment can be further promoted to provide even greater benefits.

The kindergarten as an educational institution has had to struggle almost continuously since its introduction into America for public support, and for something more than the indifference or at best the tolerance of educational administrators. This indifference or opposition on the part of superintendents has been largely based on the grounds of expense, and on a lack of vision as to educational values, and is also largely due to the inability of kindergarten advocates to demonstrate the value of their work from the point of view of the formal, academic advancement of the child. Kindergarteners have been at fault because they have scorned to meet the challenge to show preparatory academic

values in their work. The greater expense of kindergarten training as compared with the average primary-room costs cannot be denied.

To this administrative indifference must be added the opposition of many regular grade teachers. Such opposition can be traced largely to several rather unworthy, unprofessional motives. The kindergarten's superior equipment, and the freedom from formal course-of-study standard requirements are a cause of envy — a feeling that such work is unfairly favored. Many of the more formal primary teachers also confront a serious problem in readjusting the freedom-loving kindergarten "graduate" to his more restricted environment, and in fitting him in with a group of non-kindergarten children, less prepared for progressive work in reading and other primary activities.

Certain theoretical objections. This opposition is often backed by educational theorists. From the point of view of formal academic progress — advancement in the three R's — such educators argue that the year spent in the kindergarten is practically lost. Especially those who have been interested in superior children, and who have advocated the acceleration of such pupils through the formal grade work, have urged that the "serious" work of the school should begin as soon as the child enters. Such critics of the kindergarten have lost sight of the important educative values promoted by the kindergarten, and have been unwilling to recognize that the work done in this pre-primary year has a valuable preparatory contribution to make to the more academic line of work to be taken up in the regular grades.

A typical criticism of the kindergarten along these lines may be presented. Dr. Terman is one of those who have criticised the kindergarten for its failure to begin the serious academic work of the school as soon as the child enters. Dr. Terman declares:

The most abrupt break in the curriculum is that from the kindergarten to the first grade. At all other points every effort is made to bridge the gaps. The transition from first grade to second, from fifth to sixth, etc., is almost imperceptible. Even the first year of high school is rapidly being integrated with the last year of the grammar school so as to give the child an unbroken educational path which he may traverse from the first grade to the university. The kindergarten alone holds aloof, worships at the shrine of a special methodological cult, and treats its children as belonging to a different order of human beings.[1]

Such a criticism may be fair when applied to some kindergarteners. It was more fitting thirty years ago than it is now. Many intelligent educators, too, are perfectly willing to admit that the kindergarten "treats its children as belonging to a different order of human beings." This may be admitted to the credit of the kindergarten, and to the discredit of all the rest of the elementary-school program of material and method.

The Froebelian philosophy, arguing for a large measure of social training and general developmental experiences, is now being reënforced by the plea of the experts in hygiene. Together their argument is for a systematic preliminary training in the physical, emotional, and social development of the child, as over against the purely academic or intellectual training. The significance of these elements in the child's development has been shown in a striking way by Gesell. A single paragraph may be taken as illustrative of the plea he makes throughout his book on *The Pre-School Child:*[2]

The character of this mental development is by no means purely or preëminently intellectual. Almost from the beginning it is social, emotional, moral, and denotes the organization of a personality. The infant is not only acquiring perceptions and motor co-

[1] Terman, L. M.: *Intelligence of School Children*, p. 32.
[2] Gesell, Arnold: *The Pre-School Child*, p. 8.

ordinations; he is acquiring attitudes toward things and persons, prejudices, inclinations, habitual preferences, inhibitions; he is incorporating modes of behavior which do not, of course, constitute a mature personality, but which psychologically are at the core of personality. On every level of behavior, the physiological, the sensory-motor, and the higher psychical, he is acquiring both healthful and unhealthful habits of activity. Though he may not learn to read in the pre-school years, he is mastering the alphabet of life. So potent are these fundamental lessons that this period easily becomes the soil of perversion, inefficiency, and distorted or curtailed development. It is natural that the new genetic psychology places great emphasis upon the influence of infancy over character formation. Psychoanalysis reveals significant instances in which unfortunate experiences in the first years of life were competent to produce developmental disharmonies resulting in abnormal adult behavior.

The extension of this emphasis on the physical and social up into the grades, especially the primary grades, rather than the forcing of academic activities down into the kindergarten, is one of the most encouraging trends in the recent progress of educational theory and practice.

4. The educational value of the kindergarten

Systematic training in muscular coördination. The supreme importance of the physical side of the child's life during the first six years has been given special emphasis in the recent literature dealing with the hygiene of the school child. Physicians and educational hygienists have tried to impress on parents and teachers that the "growth activity of the first six years is incomparably greater than that for any subsequent six years," [1] and that physical activity and exercise are more important during this period than any other because of the great amount of disease among children of this age, resulting in an excessive mortality in this period. "Over one third of all deaths occur below the age of six." [2]

[1] Gesell, Arnold: *The Pre-School Child*, p. 3. [2] *Ibid.*, p. 4.

The kindergarten has recognized the importance of a great deal of free activity and play for the child when he first comes into the school, in order that the transition from home to school life may not be too serious a physical readjustment. The child coming directly into the more formal primary room is less fortunate in this respect; he is subjected to an unnatural, if not an injurious, constraint.

Beyond this need of activity as a hygienic necessity, the kindergarten recognizes the need of, and provides in a systematic way for, a developmental physical education. It is recognized that during this period the child should receive a systematic muscular training as well as hygienic exercise. Free play, games, folk dancing, have all been promoted in the kindergarten in order that the child may receive a highly necessary training in muscular coördinations, especially of the general body and of the arms and limbs. Earlier kindergarten theory and materials requiring fine, detailed hand and finger manipulations have been generally abandoned, and are no longer defended. Construction work with large blocks has supplanted work with the small pieces of the advanced gifts. Games, play songs, and dances involve movements or the use of apparatus which exercises the larger muscles, and promote such a variety of activities that this training is systematically adapted to an all-round control and development.

Two distinct groups. This progressive program of physical education in the kindergarten is now often arranged to adjust itself to the physical needs of two distinct groups, the kindergarten beginners and the pre-primary group. The beginners, lacking in muscular coördination, have not yet arrived at the game play and game stage of the pre-primary group. The beginner is in a stage of physical manipulation, fundamental or big-muscle adjustment, and is further limited by a short interest span which keeps him flitting from one

occupation to another, each pursued without definite purpose and often without much thought. This random-play stage of the beginner is one of trying and testing, it is the preorganized play phase in game development. It includes the "instinctive mood" plays of just skipping for the sake of skipping, just running for the sake of running, just yelling for the sake of the yell. Under proper supervision we see these skipping, running, yelling, and similar spontaneous activities combining into simple plays, not yet games, devoid of plot and characterization, but featuring climax. As these spontaneous plays begin to take on a pattern they become definitely organized in the form of the simple singing and organized kindergarten games.

It is because of this marked difference between the younger and older kindergarten children that the little tots are separated from the pre-primary group during the first of the morning, so that they may make a better gradual physical and nervous adjustment to the more controlled activities of the rest of the day. Many kindergarteners keep the little ones out of doors in physical-adjustment activities for the first hour, ending this period with a rest and lunch, then proceeding to the other activities of the daily program. Owing to this great difference between the two groups of the kindergarten, the circle period, or social gathering time, is often postponed until the end of the morning.

In double-session kindergartens the adjustment between the two groups, calling for a different program of activities, is worked out by sections. The more simplified manipulation materials, and, all in all, a more nursery-kindergarten situation, is worked out by having the younger group attend one session and the older group another. This plan would seem to have much to recommend it. The older children with longer interest spans, more purposeful activity, and employing more highly organized materials and methods, would

seem to accomplish more when in an environment expressing greater maturity and away from the immature inquisitiveness of the nursery-kindergarten tot who appears to tease, knock down, and spoil the games and more organized manual activities of his older playfellows.

Promotes social adjustment. When the average child comes into the kindergarten, the most significant element in his new environment is the social element. He usually comes from a home where he has had as his associates only adults, or a few older or younger child companions. He now must adjust himself to a large group of children of his own age. With these he is thrown into constant close association. He must learn to coöperate, and he must learn to lead or to follow. He is in an environment where he must learn his first lessons of civic obligation and opportunity. If he has been petted and humored at home, as is too often the case, he must now learn courtesy and consideration. If he has been subjected and bullied by older associates at home, he may now find a chance for initiative, sympathy, and equality.

It is no simple task we set before the child entering kindergarten for the first time. The social adjustment, when he is plunged from his home of familiar faces into a sea of countless strangers, is overwhelmingly awe-inspiring, and oft-times calls forth terrified screaming and kicking.

Much can be done to relieve this ordeal. An adult, when plunged into a strange situation, prefers to consult a program, map, guide, or plot of the situation, or else retire to an out-of-the-way point of visual vantage and make his adjustment mentally before stepping upon the scene of action. We have all observed the commuter in the station or coach, or the occupant of a lounge in the hotel lobby, who listeningly adjusts himself to his surroundings from behind his wall of newspaper or magazine, peering round from time to time until the situation is ripe for his entrée.

Why not give the kindergarten child the same right of adjustment by providing screened-in alcoves, corners, or browsing tables supplying picture books comparable in size to the *Saturday Evening Post* and daily newspaper? If the child starts his school work in the first grade, similar considerate induction may be necessary the first few days. If this ordeal has already been gone through in the kindergarten, first days in the primary room will be easier. In fact, the kindergarten child will have passed far beyond this mere overcoming of initial embarrassment. He will have been trained in necessary attitudes of coöperation, courtesy, group enthusiasm, and leadership, and will have acquired a measure of poise.

Develops academic curiosity and interests. The kindergartner is trained to recognize the child's natural curiosity and the variety of his natural interests. A prominent phase of the kindergartner's creed is the value of stimulating and satisfying this curiosity by providing the largest possible variety of objects of interest — pets, flowers, toys; materials and exercises for all sorts of experiences with color and form; activities that will call into play all the possible sensory experiences; raw materials, paper, crayons, clay, sand, cloth, wood, and the tools to use with them; as well as outdoor excursions to give contact with the things of nature that cannot be brought in or are more effectively observed in their own environment. To these is often added the imitative play of adult occupations.

Aside from offering this environment of new and varied objects and activities, the kindergarten serves as a more distinctly academic preparatory experience in that the stories, songs, and construction work stimulate the desire to read, and arouse an interest in books and in other educative activities that will become prominent as soon as the child's more formal curriculum is entered. Especially important

is the interest in books and reading as the source of absorbing "stories" and catching rhymes.

Freedom of expression and activity promoted. The child at the age of coming to kindergarten has two great prerogatives, the right to explore and the right to inquire. These are based on instinctive promptings and furnish the natural basis for his early education, if not for all his real education through life. The provision of stimuli for these instincts of active curiosity have already been outlined. Further, the work in the kindergarten is so planned, especially in the freer type of room, that there is more than an opportunity or invitation to expression through speech or action. Only the more stupid or most diffident can withstand the urge to ask, and tell, and act. From the time the child first greets the teacher in the morning, he feels he must tell all the experiences that have come to him. The kindergarten teacher is often an embarrassed confidante, hearing of all the leading episodes of the family history. Throughout the day the expressive reaction to all experiences is in evidence. The child, after the first few days of getting acquainted with his associates, is quite eager to use his new friends as an audience for a relation of his experiences, for singing them a song, for retelling a story, or for playing a part in a dramatization.

Thus the child's development in his language control through expression undergoes a rapid advancement. Not only in his own repetitions of stories and songs, but in his hearing of other children's experiences, a varied and natural contact with language is brought about. The significance of this in the way of vocabulary-building will be more fully developed in a later section. At this point we have in mind the values in speech training and the overcoming of self-consciousness in group-expression work. The child is given such freedom that the habits of poise necessary in such ex-

ercises are well started. Too often, however, this good start is not strong enough to battle against the inhibitions that are put upon it by the later formalism of the school.

Prepares for the work in beginning reading. When a child begins his work in reading in the first grade his progress is largely determined by two factors — his general intelligence, and his vocabulary. The latter is merely an index of the ideas he has accumulated and the ability to use these ideas through the word-sounds he has learned to associate with his ideas. The new thing he has to learn is to associate the written or printed word symbols with his stock of sound symbols. Even those with less than average intelligence can learn to make these necessary associations between the sight symbols and the sound symbols. The bright child will learn to do this more readily than the child of average intelligence, but all except the more stupid can learn the process in a year.[1]

The child's progress, then, will perhaps be more largely determined by his range of ideas or by his usable vocabularly than by any other factor. This vocabulary range will be a factor both in the first stage of reading — the learning of the preliminary stock of words before actual reading is begun — and, even more, after he proceeds independently to apply his new skill in actual reading.

In the development of this vocabulary factor the kindergarten can play as great a part as a more formal, academic program, and can make a more systematic contribution than the accidental contacts of the average home. The vocabulary possibilities of the home have already been exhausted by the age of four or five. A new and enriched environment, a different experience, is profitable for a progressive growth in ideas and vocabulary. Such vocabulary expansion can

[1] The term "symbol" is here used as applying to whole words, not to letters, syllables, or phonograms.

still be best promoted by contact with new ideas incidental to experiences entered into with such interest and enthusiasm as the kindergarten is intended to promote, with its natural social contacts and stimulation, with its variety of materials, and with its encouragement of freedom in exploration and expression.

General preparatory value of the kindergarten. It has been shown, by a series of careful experimental studies, that the "repeaters" in the regular grades in the towns and cities without kindergartens exceed, by about seventy per cent, the number of repeaters in towns and cities having kindergartens; that training in a kindergarten tends to prevent retardation; that kindergarten children are more likely to remain in school, and are less liable to fail; that the kindergarten training is equal, on the average, to a gain of from four to five months in the school life of the child; and, perhaps most significant of all from the point of view of the primary teacher, that, as measured by a variety of standard tests, kindergarten children have a marked advantage over non-kindergarten children, both in rate of reading and in comprehension of what has been read.[1]

Except in school systems where the kindergartner was not sufficiently grounded in the psychology of childhood and the philosophy of her work, or where she was unable to withstand the demands from principal or superintendent that her children must show some academic achievements, preferably the first steps in reading, the adjustment of the kindergarten to the grades has not been made by introducing the formal grade work into the kindergarten program. In the few cases where such beginnings of academic work have been attempted the results have not justified the experiment.

[1] Gard, Willis L.: "The Influence of Kindergarten on Achievement in Reading"; in *Educational Research Bulletin*, Ohio State University, April 2, 1924, pages 135 to 138.

The kindergarten child's immaturity makes any prospect of success in reading unlikely. The kindergarten's contribution to his education must be found rather in the other developmental values that have been outlined in the preceding sections.

With respect to many of the characteristic experiences and activities of the child from the age of four and a half or five, the training of the kindergarten is superior to the training of the home. The program and theory of the kindergarten make the training more systematic and progressive. Except in the case of a few specially trained mothers, the child's pre-school educative experience is a matter of chance and whim and convenience. Moreover, the kindergarten training takes place in a more suitable social environment. The child is surrounded, stimulated, and held in check by a number of his peers.

How the gap is being closed. The transition from the kindergarten to the first grade is being made less difficult. Primary teachers and kindergartners are meeting the problem together. National organizations of both groups are meeting and planning together for a better understanding, and adjustments suggested by such conferences are being promoted in school practice. Kindergartners are coming to recognize that they are not serving the best interests of the child by assuming an attitude of aloofness, a feeling that their educative activities are a separate institution because their theory and practice is so different from the formal grade work. They no longer insist that training by the theory of Froebel is almost an esoteric cult.

This approach to coöperation is being made in a still more generous way by the primary teachers. Primary leaders have come to recognize that they had far more to yield; but they have recognized that to yield meant to gain. Yielding to the kindergartner's theory and methods and materials

meant a gain for the child as well as for the teacher. First the primary teacher, and then even the teachers of the more advanced grades, have adopted the kindergartner's story-telling, her dramatizations, her construction work, her activity programs, her plays and games and dances. In the project movement, especially in some of the misinterpretations of the project, there is even a danger that some advanced school work may be too much after the plans most suitable to five-year-olds. In themselves such imitations of characteristic kindergarten activities are not nearly so important or significant as the fact that the imitations are indicative of a change in attitude toward the learning child.

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CHAPTER V

TESTING AND CLASSIFICATION OF THE PUPILS

1. Entrance classification — The first day of school — Three types of children — The second day and afterward — The daily program — Individual record blanks.
2. Systematic testing programs — (*a*) Physical examination — Importance of — What the teacher can do — (*b*) Intelligence testing — Wide, usefulness of — Importance of in the first grade — Some usable intelligence tests — The Detroit First-Grade Test — The Haggerty Intelligence Examination — The Pintner-Cunningham Primary Mental Test — (*c*) Tests for experience and vocabulary — Derivation of these tests — The twenty tests that may be used — Record sheets for the tests — Administering the tests — (*d*) Tests for emotional traits — Regrouping and promotion.

Selected references.

1. Entrance classification

The first day of school. The opening day of school in the first grade is a day of pupil adjustment. It is not the teacher's day, it is the child's day. It is the day of transition either from home to first grade, or from kindergarten to first grade. In the latter case the transition is less abrupt, but in either case there are a number of adjustments which the child must make, and which call for considerable tact and sympathy on the part of the teacher.

The teacher's aim is to make the children feel happy and at home in the new situation. To this end she acts as scene-shifter; simplifying the environment or enriching it, as the needs demand; consoling, mothering, assisting, and protecting.

Three types of children. The children come trooping in one or two at a time to be registered, and soon we find the room well-nigh filled with all ages — pupils, older brothers and sisters, and parents. The entering children divide themselves into three general classes.

Group I. This group consists of the brave kindergarten graduates who know it all, and the few last-semester repeaters who have risen to the rank of leaders by right of seniority. We may speak of these as the well-prepared group.

Group II. A second group embraces the "baby" whom we know as "one of the Smiths"; we have taught all his older brothers and sisters; he is accompanied on this first day by an older brother or sister, who has already taught him his sounds, and counting to one hundred, and has filled him with either pleasant anticipation or dread of his début into first-grade society. This is the partly prepared type.

Group III. Lastly we have the only child, brought by a fond parent. If we can persuade the mother to leave the child to our tender mercies, we are glad, but usually she visits for the first few days. This excess of solicitude, which has usually resulted in making the child too dependent, backward, and diffident, is responsible for the unprepared type we have to deal with.

Some of the newcomers immediately find attraction in the large floor blocks, the dolls, the playhouse, the browsing table, or floor games. Some cling to the side lines, or hug mamma's skirts. Others, courageous but immune to the interest displayed by their comrades, stand in the center of the room with hands in pockets, clutching their hats or refusing to take them off, with one eye on the teacher and the other on the nearest exit. It is quite a cosmopolitan group. Never before did children look or seem so individual. To the new or inexperienced teacher a satisfactory outcome of this melting-pot situation looks impossible. They are in the pot, to be sure, but they will neither melt nor flow together.

Soon, however, through the leadership of Group I, plus the initiative of Group II's older brothers and sisters, knots of children gather in play centers and around inviting toys.

There is much manipulation in evidence, principally with the younger Group II children and most of Group III. This means a flitting back and forth from this to that, or a standing back and observing the participations of others.

We observe three levels of play in our beginners. The activities of Group III are best characterized by the word "alone." They stand aloof, watching or gazing, sometimes manipulating materials, but by themselves. The next higher play level is best designated by the phrase "in company." These children are learning to play in company with one another. They like to sit close together, and to use the same kind of materials, but carry through their individual problems after their own fashion. The highest play level is a truly social one. In it children give and take, and share and exchange plans and objectives to meet the consensus of opinion of the majority. So on this first day we observe children engaged in activities on the three play levels.

As the day wears on, and the audience of parents and older brothers and sisters retires, we see neighborhood friends recognizing one another and joining in a frolic of good fellowship, as we have observed them in the streets and in their yards. We see the more retiring pupils pairing off and eating a bit of lunch, tossing a ball, swinging one another, or piling sand together, in complete oblivion of the rest of the room. These are helpful signs for the teacher, and they are her cues that now it is safe to call the group together. This she does, and a game, story, song, discussion of rules and regulations, or assigning of lockers and supplies ensues. Thus the day draws to an end, leaving both teacher and class eager to build on this first day's introduction.

The second day and afterward. On the second day the children enter their room informally without a preliminary play period out of doors. The teacher greets each with a

cordial handshake, fixing in her mind faces and names, and enlists their assistance in the preparation of the room for the day. Some arrange flowers, some water the plants and hanging baskets, and some unlock closets, get out the dolls, and distribute chalk and arrange pictures or notices on the bulletin board. The room is in readiness, and now quite a group has assembled. The children take up self-appointed tasks and pursue them for an hour.

The teacher brings the period to an end with a tap on the piano or the triangle, which is followed by a general cleaning-up and ordering of the room. She seats herself in a chair, with the council rug at her feet. The children congregate as soon as their materials are put away. The discussion that follows summarizes the work of the free-choice period, introduces standards of measurement for manual as well as intellectual pursuits, brings out the need for rules and regulations, and introduces the program of work to be followed for the remainder of the morning. This discussion period is very often a lively language or nature-study lesson, often culminating in a period of singing, story-telling, or dramatization.

The daily program. The daily program, after the second day, in a double-session room, might read as follows:

8:30– 9:30. Greeting, free-choice period for problems and projects.
9:30– 9:50. Clean up room and short recess.
9:50–10:20. Discussion, nature, language, song, story, or dramatization.
10:20–10:40. Group I, reading.
Group II, reading or number seat-work problems.
Group III, kindergarten activities.
10:40–11. Open-air games and play.
11:00–11:20. Group II, reading.
Group I, reading or number seat-work problems.
Group III, kindergarten activities, rest, or lunch.

11:20–11:40. Group III, kindergarten introduction to reading. Groups I and II, browsing table.
11:40–12:10. Directed work in drawing, writing, etc., as prescribed by the course of study.
12:10. Dismissal.

With the inauguration of a program which orders the activities of the first grade and at the same time provides ample opportunity for choice-making on the part of the child, the teacher should lay out for herself a program of pupil observations, extending throughout the first week of school and culminating in the testing and grouping in her class.

Individual record blanks. The teacher should make use of any standard child-study record blank, such as the *Chart for Recording Individual Interests and Progress in the Kindergarten*, by Olga Adams and Priscilla Kinman, or the record blanks used in the kindergarten department of the Horace Mann School of Teachers College, Columbia University,[1] or she may gather suggestions from the following record and work out her own.

DAILY RECORD

Date.....

NAME	SELECTION	PROJECT	PROBLEM	CONSTRUCT	MANIPULATE	SOURCE	SOLUTION	PLAY	INTEREST SPAN	REMARKS
1										
2										
3										
4										
5										

[1] See note at foot of page 120, in Hill, Patty S.: *A Conduct Curriculum for the Kindergarten and First Grade.*

MONTHLY SUMMARY

NAME	AGE	TYPE	DEVELOPMENT	NEED
1				
2				
3				
4				

DIRECTOR'S MONTHLY RECORD

Date.....Place.....

NATURE	APPARATUS	STORY RHYME SONG	GAME	DRAMA

By whatever means are at her disposal the teacher should summarize what the child brings to the school: curiosity, exploring interest, manipulation, experimentation, trustfulness, intense activity, short interest-span, industry, persistence, earnestness, zeal, seriousness, imagination, playfulness. Later, as opportunity offers and as occasion suggests the need for further study of some children, she will make a careful study of the kindergarten promotion cards, or she will make contact with some of the homes to acquaint herself more thoroughly with the children. As the children are

mingling together or shying off to a corner, she will note their individual and social reactions, their ability to express themselves in English, their muscular coördination, and their choice of interests.

2. *Systematic testing programs*

Within the first month or two this study and observation of the children should gradually develop into a more or less systematic testing of each child. This testing should include four general phases:

(*a*) Physical examinations.
(*b*) Tests for general intelligence.
(*c*) Tests for experience and vocabulary attainment.
(*d*) Tests for disturbing emotional traits and attitudes.

We shall consider each of these phases, in order:

(*a*) *Physical examination*

Importance of. School officials generally recognize the fact that teachers are not competent to make the necessary physical examinations of children. It is not so generally recognized, by either school officials or parents, that such physical examinations are of vital importance to the child. In the more progressive systems provision is made for these periodical physical examinations. Both as a social safeguard and as an insurance of the individual child's welfare, school doctors, dentists, oculists, and nurses are provided. Such professional service cannot be approximated by the average teacher, but if provision is made for it in the system, it is the teacher's obligation to coöperate with the physical-welfare program, and to see that children are sent in for examinations if there is the slightest evidence that physical conditions are interfering with successful school work.

Where no provision is made for professional attendance,

the teacher has a double responsibility. She should become a center of propaganda for such care of the health of the children. Her influence should be exerted on parents, school-board members, superintendent, or principal. Each concrete case needing professional attention should be made an argument in the campaign for health conservation. In order to do this social part of her work most successfully the teacher will also have to begin a systematic program of study to inform herself in matters of school hygiene, and to qualify herself for important emergency substitute work for the professional examinations.

What the teacher can do. Certain types of health work in the way of physical examinations must be learned as well as circumstances permit. The teacher should qualify to make crude diagnoses of a number of common physical defects which interfere with school work, such as eye and ear defects, and nose and throat troubles. She should learn to detect the symptoms of the common contagious and infectious diseases to which children are exposed. The detection of any such defects should be made a matter of conference and advice with parents, or principal, or, in the rural communities, with board members. This is a clear welfare duty, both to the individual child and to the community. Negligence or indifference in such matters is a more serious unprofessional failure than lack of preparation for the regular schoolroom work. Perfection is neither possible nor required; the teacher cannot be expected to train herself as a doctor or a nurse; but means are available, in educational and health literature, which make it possible for the teacher to meet a considerable part of her social obligations with reference to the health of children under her charge.[1]

[1] The best manual for the teacher on such problems is L. M. Terman's *The Hygiene of the School Child.*

(*b*) *Intelligence testing*

Wide usefulness of. Next to the physical examinations, the most important phase of child study for the teacher is the matter of testing general intelligence. The technique of intelligence testing has been so fully developed, and the method has been so greatly simplified, that any teacher may become sufficiently proficient to derive considerable practical values for her school work from the use of such tests. The training in the administration and interpretation of such tests has now become a regular part of the course in teacher-preparation in both normal schools and universities. Before many years the ability to apply intelligence tests will be taken for granted as a necessary factor in the equipment of any well-trained teacher.

The application of intelligence testing to the problems of instruction in the regular class room is no longer confined to the work of trained experts. Important decisions in the educational life of the child, such as assignment to special schools or rooms for those of feeble intelligence or the super-bright, may still continue in the hands of specially trained psychologists, who work in the light of the results of individual tests. By the use of the cruder group tests, however, such considerable values may be derived from intelligence testing that the average teacher may be permitted and advised to learn the technique of giving such tests as a background for her own teaching problems. If a teacher is qualified to teach, and if she will conscientiously follow the manual of directions that accompanies any of the group tests, she can soon learn the art of applying intelligence ratings to her pupils with sufficient accuracy to yield most helpful practical values for her daily instruction work.

Importance in the first grade. Leaders in the testing movement have developed a long list of the practical school-room values that may be derived from the use of intelligence

tests.[1] If the values are of any significance, they are of greatest importance in the first grade when the pupil enters upon his school work. As tests are at present organized, the leaders in the intelligence-test movement admit that the "general intelligence" which is being tested is difficult to define, scientifically, but they are all agreed in their definition of "general intelligence" in practical terms. The general intelligence test is a test of "ability to do school work." Knowing the degree or quantity of this ability possessed by each child in her class is one of the most valuable aids a teacher can have, and this knowledge of all children in a class can usually be determined by the teacher, during the first few weeks of school, with a few hours of work in the giving and scoring of an intelligence test. The rating of abilities to do school work can be determined much more accurately by these testing devices than can be done, by the average teacher, in a whole semester's experience and contact with a class. Such ratings of pupil abilities should be secured at the very beginning of their school careers. The variations in intelligence are more significant in first-grade work than in any other single year of school work.

It is unfortunate that the facilities for giving group tests to first-grade children have not been as fully developed as they have been for the more advanced grades. This is, of course, largely due to the fact that group tests have made so much use of the advanced child's ability to read, and of such other types of school attainments as arithmetic. The individual intelligence test, such as the *Stanford Revision* of the *Binet Test* is, of course, as effective and as accurate for children of five or six years as for those of any other age.

Some usable intelligence tests. There are, however, several tests on the market which can be used by the primary

[1] See, for example, Terman, L. M.: *The Measurement of Intelligence*, chap. I.

teacher as a convenient means of getting an approximate rating of the general intelligence of her pupils. Several of these may be described in some detail to give the primary teacher an idea of the means available.

1. The Detroit First-Grade Intelligence Test. This is a group test which can be given to about ten or twelve children at one time. There is no time limit to the test, but the work can be done in from thirty to forty-five minutes. It is possible by this means to classify all children into seven distinct groups of ability. The test folder on which the children work includes ten tests involving various mental abilities such as classification, the recognition of similarities, evaluating size, indicating associations, indicating a knowledge of number, and the like. All of the work is done by following oral directions for making marks on a series of pictures or geometrical figures. The whole procedure has been highly simplified, and the directions for the teacher are such as to make it quite possible for her to keep most children interested and working at their best. Provision is made for supplementary direction and encouragement during a practice exercise for each test, so that even slow pupils have a chance to understand the directions quite clearly.[1]

2. The Haggerty Intelligence Examination (Delta 1). This is one of a series of two intelligence tests, Delta 1 being intended for grades one to three, and Delta 2 for grades three to nine. Both tests are modifications of the army intelligence examinations. Delta 1 consists of the following tests: oral directions, copying designs, picture completion, picture comparison, symbol-digit, and word comparisons, making a booklet of twelve pages. Full directions for giving, scoring, and interpreting the results of the tests are given in a separate Manual, which must be used by the teacher giving the tests.

[1] The *Detroit First-Grade Intelligence Test* is published by the World Book Company, Yonkers-on-Hudson, New York, and Chicago, Illinois.

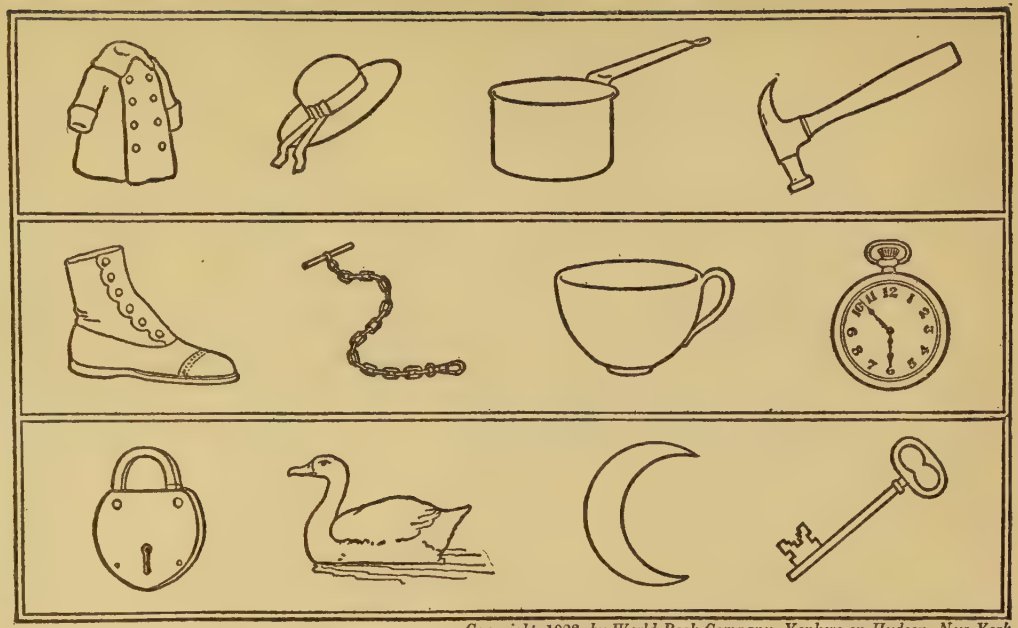
The Manual gives also a brief discussion of the means of improving school work based on the results of the tests, and some valuable general information about tests and testing.[1]

3. The Pintner-Cunningham Primary Mental Test. This is a group test for kindergarten, first- and second-grade pupils. Ten or fifteen kindergarten children can be tested at one time, and as a rule all pupils in the average first- or second-grade room can be tested together. The fact that the same test can be used over this three-year span gives the advantage of determining the degree of overlapping in mental ability in the successive years, making it possible to adapt school work more easily to the needs and abilities of individual children, without giving too much consideration to the grade in which they may be classified. The test, naturally, does not require reading ability, but is made up entirely of pictures, which the pupils mark according to directions given orally by the examiner. A sample page of the test is shown on page 87. There are seven tests in the booklet. The mental traits tested or the types of activity involved are indicated by the titles given the tests in the Manual of Directions:

Test 1. Common Observation.
Test 2. Æsthetic Differences.
Test 3. Associated Objects.
Test 4. Discrimination of Size.
Test 5. Finding Picture Parts.
Test 6. Picture Completion.
Test 7. Dot Drawing.

The Manual of Directions gives complete instructions for administering the tests, with everything to be said to the

[1] The *Haggerty Intelligence Examination* is also published by the World Book Company.



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SAMPLE PAGE FROM THE PINTNER-CUNNINGHAM PRIMARY MENTAL TEST

pupils printed in heavy type. A key for correcting the papers, instructions for interpreting the results, and tables of grade- and age-norms are also given.[1]

(c.) *Tests for experience and vocabulary*

Derivation of these tests. Of equal importance with the tests for physical and mental abilities and disabilities of the child would be a test that can give us an inventory of the child's past experiences and learning. The primary teacher should be in the same position as the teachers of advanced grades in testing the child's achievement with reference to the work that lies ahead of him. In the primary grade, the chief work being the first steps in reading, the child's achievements in the way of spoken vocabulary are the basis of his progress. This spoken vocabulary represents the ideas or meanings the child has learned in his pre-school experience and the word symbols he has come to associate with these ideas.

In this section of the chapter it is proposed to present to the primary teacher a series of twenty vocabulary tests which will make it possible to get quite a complete inventory of the child's pre-school ideational development. The tests are based on a vocabulary of about 1240 words that have been determined, scientifically, as constituting what may be called the spoken vocabulary of the average six-year-old child.

The list of words used in making up the tests was derived from four sources:

1. The list of 1084 words given in Part I of *The Twenty-Fourth Yearbook of the National Society for the Study of Education*, pp. 186–93. This list is included in a chapter on "Materials for Instruction in Reading," by Professor Ernest Horn, of the University of Iowa.

[1] *The Pintner-Cunningham Primary Mental Test* is also published by the World Book Company.

The list there given was compiled from several investigations of the spoken vocabulary of six-year-old children,[1] made by Professor Horn, Mrs. Ernest Horn, and Mr. P. C. Packer.

2. The list given in the *Twenty-Fourth Yearbook* was compared with the first 1000 words of Thorndike's *Teacher's Word List*, and when the testing emergencies required the use of certain words which experience with pupils of kindergarten and primary age had shown to be more or less common, they were used if found in the Thorndike list. There were 34 such words used from the first 500 in the Thorndike list, and 57 from the second 500.

3. The list from the *Yearbook* was also checked against the 1000 words of the *Ayres Spelling Scale*, and 25 additional words were used on the basis of that source.

4. In experimenting with the tests on a large number of first-grade children during the development of some of the materials, some additional words were included as reasonably within the range of the purposes of the test and the related lessons which teachers are advised to base on these exercises for vocabulary-building purposes. The list of words thus added from the last three sources to the fundamental list taken from the *Twenty-Fourth Yearbook* includes the following:

above	bowl	cork	factory
address	brave	crack, *n.*	February
against	bright	crack, *v.*	few
age	broad	crown	forenoon
ago	brook		forest
among	build	dark	fourteen
April	burn	December	
August		dime	grain
axe	cannot		
	chew	east	hat
beautiful	city	eighteen	hatchet
began	clown	evening	he
between	contain	except	head

[1] When the results of these three studies were put together, nearly 5000 different words were found. However, many of these occurred but once or twice. In order to secure a more limited list which seemed likely to contain those words which the average first-grade child could be expected to know, all words were taken which occurred in three investigations with a total frequency of 15 or more, or in two of the three investigations with a total frequency of 25 or more.

heart
heat

inch
its

January
July
June

kept
king
knot

large
lead
less
let go
littler
longer
lose

ma'am
mail
March
May
melts
million
month
mountain

nineteen
noisy
noon
north
November

oak
ocean
October
often
outside
oven

peas
present
presents, *n. pl.*

quarter
queen
questions

railroad
rather
recess
rise
rose
rough
rub
rubber

sat
say
sea
seek
September
seventeen
shape
sharp
ship
short
shoulder
shout
sides
sixteen
skin
sleep
smaller
smile
soap
south
speak
stamp
steamer
stood
stream
study
syrup

tall
tame
taste
teach
thick
thin
thirteen
Thursday
to-night
toward
travel
try

vest
village
visit
voice

wave
week
weather
Wednesday
weight
west
wheat
wild
wing
within
without
women
wonderful
worst

young

Test I. Color Test

Directions for giving a color test: Have a color card with the eleven colors given in the list below. Ask, "What color is this? this?" etc., in the order given. On the record sheet jot down the number of any color the child does not know.

1. blue
2. black
3. red
4. white
5. yellow
6. green
7. orange
8. pink
9. purple
10. gray
11. brown

Next ask the child "Do you know any other colors?" If he says he does, say, "Name them." In scoring add the number given in the proper place.

Then ask the questions given below. Score by entering the question numbers the child missed.

12. What color is the grass? Green.
13. What color is coal? Black.
14. What color is chalk? White.
15. What color is the dandelion flower? Yellow.
16. What color is chocolate? Brown.
17. What color is this (a piece of gray cloth)? Gray.
18. What colors are in the flag? Red, white, and blue.
19. What color is this (a piece of pink cloth)? Pink.
20. What color are oranges? Orange.
21. What color is a carrot? Yellow or orange.
22. What color is snow? White.
23. What color is butter? Yellow.

Test II. Following Directions

Directions: To give this test have the child seated at a low table opposite you. On the table you should have two books (one with a red cover), one pencil, several pennies, a nickel, a dime, a quarter, a dollar, a sheet of paper, several marbles, a piece of string, a picture.

Score the test by entering on the record sheet the numbers of the directions that were not understood or were not executed properly.

1. What is your name?
2. Point to yourself.
3. Clap your hands.
4. Fold your hands.
5. Can you make a bow for me? Stand up and do it.
6. Show me how high you can reach.
7. Put your right arm around this book.
8. Put that book under your left arm.
9. Put both books on your chair.

10. Can you catch this marble? Roll it to me.
11. This consists of a series of directions to point to different parts of the body. Say, "*Show me your arm*," and so on through the list. Enter any not known by the *letter* preceding it.

a. arm	*g*. finger	*m*. mouth	*s*. tongue
b. chin	*h*. foot	*n*. nail	*t*. tooth
c. ear	*i*. hair	*o*. neck	*u*. head
d. eyes	*j*. hand	*p*. nose	*v*. body
e. face	*k*. knee	*q*. teeth	*w*. breast
f. feet	*l*. leg	*r*. thumb	

12. This consists of a series of directions similar to those in the preceding question, to point out or indicate different articles or parts of *clothing*. Modifications may have to be made in the questions. If the child does not have on a *coat* or a *sweater*, ask him, "Where would you wear a sweater, if you had one on?" Enter any not known by putting down "12*a*, 12*b*, etc.," on the record blank.

a. button	*e*. coat	*i*. stockings
b. collar	*f*. dress	*j*. sweater
c. belt	*g*. hat	*k*. pocket
d. cap	*h*. shoe	

13. (Have three pennies and two books.) Say, "Put one of these pennies on each of these books."
14. Turn those books over.
15. Turn them around.
16. Then touch the cover.
17. Hold this book up until I tell you to lay it down.
18. Now lay it upon that one.
19. Hand the child an open book and say, "Turn to the next page in this book."
20. Tell me what these are: (*a*) penny; (*b*) nickel; (*c*) dime; (*d*) quarter; (*e*) dollar. (Lay the coins before the child in order.)
21. Rest your hand on this paper while I am writing. (Keep on writing while you say the next direction.)
22. As soon as I have stopped, put a book on the paper.
23. Point to the tip of this pencil.
24. Whose pencil is this?
25. Help me by making a cross here. (Draw a square on a piece of scratch paper and hand the pencil to the child.)
26. Mark a cross here. (At any other place on the paper.)

27. Fold this paper three times.
28. Tear this paper.
29. Put the pencil beside the red book.
30. Rub your thumb across this paper. Do it again.
31. Tie a knot in the end of this string.
32. Tie another in the middle.
33. Please pass that picture to me.
34. Show me with your hands how wide this table (or desk) is.
35. Tell me a short word for automobile. Auto or car.
36. Can you hop? Hop on your right foot.
37. Can you skip? Can you jump?
38. Show me the second seat in this row.
39. If a boy wants to whistle, show me what he does with his lips.
40. Tell me another word for by-and-by.
41. Set this book on the floor.
42. What have you done with the book?
43. Touch either this book or that one.
44. (Take away the nickel, and say:) What am I taking away?
45. Close your eyes till I tell you to open them. (After a moment:) Open.
46. Is my hand turned up or down?

Directions for tests III, IV, and V. These three tests given below consist of pictures containing a number of distinct objects, grouped together by a common idea, and each arranged in the test lists in order of approximate difficulty.[1] The picture is laid before the child, and he is asked, "What is this?" a few times, as the examiner points to the objects in the list. Then continue by saying, "Show me a band, a cage, etc." To score Tests III, IV, and V, enter in the record the numbers of the picture objects which the child cannot identify.

[1] Pictures for use with Tests III, IV, V, and X are inserted in this chapter. They may readily be removed from the book for use as tests. If, however, teachers feel that objects in these drawings are too small, or if it is preferred not to remove the inserts for testing purposes, similar pictures may be made by pasting a composite of cut-outs from papers or magazines on one or several large sheets of cardboard. This latter method must be used to provide the picture test-cards for Test VI.

Test III. The Circus

Give the words below in the order numbered:

1. Indian
2. flag
3. ladder
4. band
5. cage
6. elephant
7. lion
8. monkey
9. tent
10. star
11. clown
12. tiger
13. camel
14. bear
15. chain
16. donkey
17. wolf
18. reindeer
19. merry-go-round

Test IV. Taking a Trip

Give the words below in the order numbered:

1. auto
2. train
3. bicycle
4. buggy
5. boat
6. engine
7. track
8. cart
9. cars
10. carriage
11. aeroplane
12. cloud
13. truck
14. balloon
15. sail

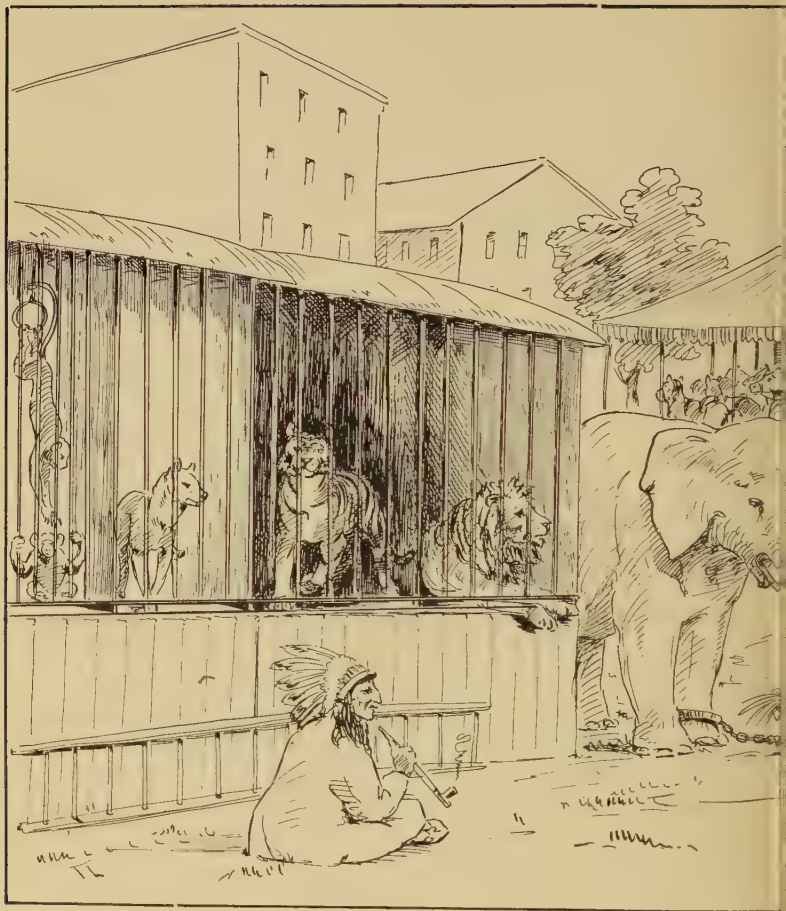
Test V. On the Farm

Give the words below in the order numbered:

1. dog
2. horse
3. cow
4. chickens
5. wheel
6. whip
7. barn
8. sheep
9. pony
10. wagon
11. pig
12. bunny
13. coop
14. duck
15. horn
16. turkey
17. squirrel
18. goose
19. farmer

Tests VI. Playing Cards

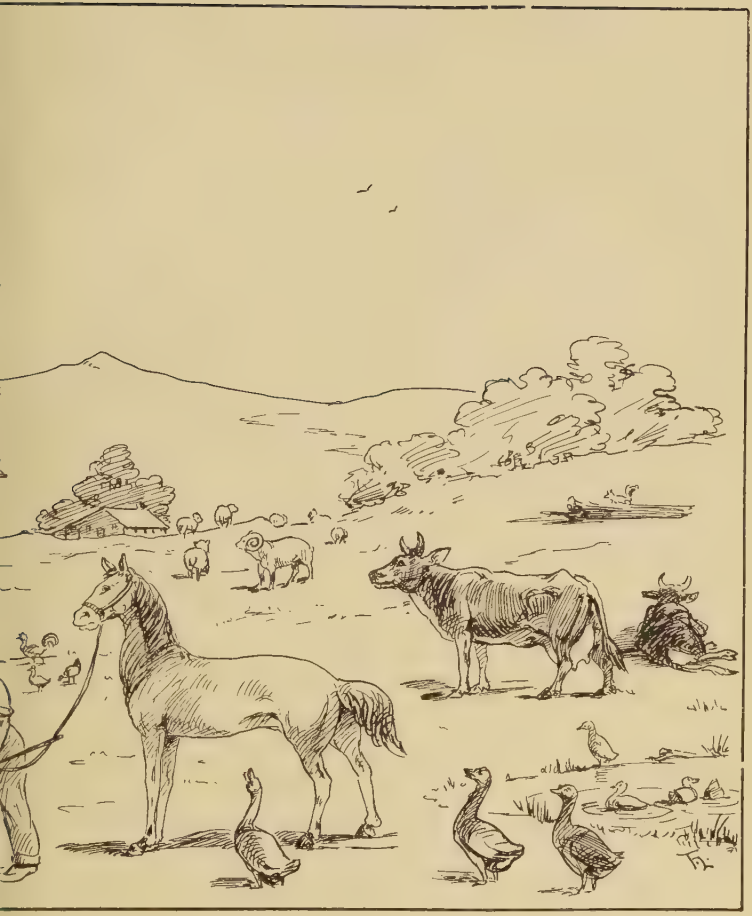
Directions: This test is quite similar to the preceding picture tests in material and procedure. It consists of a pack of cards, each showing one object or several. The child is asked, "What is this?" as the cards are shown by the method usually used with flash cards. If the card has several of the words in the list pictured on it, the teacher points to the several objects in succession. The collection of cards may be made by the teacher, either as single pictures or as composites, by cutting out the necessary pictures from magazines, catalogues, or other sources, and pasting them on cards of a uniform size.



TEST PICTURE FOR VOCABULARY TE

I. The Circus. (See page 94)

TEST PICTURE FOR VOCABULARY T



. On the Farm. (See page 94)

Give the words below in the order numbered. Score the test by entering in the child's record the numbers of the picture-objects which he cannot identify.

1. fish	12. trunk	23. cape
2. basket	13. church	24. mouse
3. umbrella	14. bed	25. nest
4. man	15. bee	26. children
5. baby	16. bell	27. desk
6. comb	17. bonnet	28. dish
7. frog	18. flower	29. piano
8. key	19. cradle	30. telephone
9. bird	20. football	31. dolly
10. butterfly	21. bridge	32. a pile of nuts
11. apron	22. box	33. shell (of nut)

Test VII. Definition by Uses

Directions: In this test the teacher is to ask the child what the things named in the word list given below are used for. Accept any statement that seems to you a reasonable indication that the child knows the general meaning of the word, or has an idea of its use. Formulate the question for each word, as the following: "What is *gas* used for?" "What are shoes used for?" After several have been asked and answered, merely name the words, if the full question no longer seems necessary. Keep a tally on the record sheet of the word-numbers that are not adequately defined in your opinion. The number missed, subtracted from 75, constitutes the child's score for this test. Typical acceptable answers are given for the first ten words in the list:

1. What is *gas* used for?	To light, or to cook with.
2. gasoline	To put in an automobile; to run an automobile.
3. a balloon	To go up in the air.
4. a bank	To put money in.
5. a barn	To put horses or cows in.
6. a bedroom	To sleep in.

7. a blanket — To keep warm; to cover you.
8. cage — To keep a bird (or animal) in.
9. candle — To give light.
10. carpet — To walk on; to cover the floor.

11. brake
12. chimney
13. clock
14. coop
15. button
16. cradle
17. cupboard
18. curtain
19. garage
20. dishes
21. dollars
22. fire
23. glasses
24. engine
25. drum
26. gum
27. handkerchief
28. ice
29. kettle
30. ladder
31. hay
32. jail
33. kitchen
34. marble
35. match
36. hoe
37. lock
38. hose
39. napkin
40. pail
41. paste
42. pencil
43. piano
44. pillow
45. nightgown
46. pin
47. pitcher
48. plow
49. pocket
50. porch
51. sail
52. saucer
53. scissors
54. shelf
55. shoe
56. tablecloth
57. slippers
58. socks
59. stockings
60. sweater
61. telephone
62. tent
63. watch
64. whip
65. towel
66. toys
67. truck
68. trunk
69. tub
70. syrup
71. cork
72. butter
73. powder
74. bat
75. cigar

Test VIII. Synonym Test

Directions: Say the words in the first column, one at a time, and with each say to the child, "Tell me some other word that means the same thing." Give credit for those answered correctly with the corresponding word in the list, and accept any other good synonym that the child gives. If the child cannot think of the word, make up some simple sentence that indicates its meaning. Enter on the record blank the numbers of the words the child cannot give a synonym for. After completing the list, go over it again, saying the words in the second column that the child could not give on the first round. If the child gives the corresponding synonym in the first column, give credit for that pair by crossing out the corresponding number from the record previously made. Give the words in the order given here.

1. bunny — rabbit
2. penny — cent
3. rock — stone
4. lady — woman
5. road — street
6. cap — hat
7. happy — glad
8. lots — much, many
9. hen — chicken
10. crayon — chalk
11. carriage — buggy
12. sound — noise
13. leave — go, go away
14. want — wish
15. bonnet — hat
16. circle — ring
17. scared — afraid
18. station — depot
19. keep still — keep quiet
20. healthy — well
21. just — only
22. about — almost
23. nearly — almost

Test IX. Opposites Test

Directions: Say to the child, "Now we are going to play a word game. I am going to tell you some words, and you will tell me some word that is very different. When I say a word, tell me some word that means the opposite. If I should say 'black,' you would say 'white'; if I said 'fast,' what would you say? 'Slow.' That's right. If I said 'good,' what would you say? 'Bad.' Now we will play this word game."

Say the words in the first column, one at a time, and give the child plenty of time to respond. If the child cannot think of a word, make up some simple sentence with the word you gave. On the record blank enter the numbers of the words the child cannot give the opposites for. Accept any good opposites beside those given. After completing the list, go over it again, giving only those words in the second column that the child could not give on the first round. If the child gives the corresponding opposite in the first column, give credit by crossing out the numbers from the list previously made.

Give the words below in the order in which they are numbered.

i. clock	*l.* egg	*o.* brush	*r.* kitten
j. bowl	*m.* spider	*p.* kettle	*s.* pot
k. pail	*n.* bottle	*q.* tub	*t.* candle

12. Does your mother sweep the carpet with a broom or some other way? How?
13. Suppose your grandma was at your house, what would she use to wipe the dishes?
14. What is an oven used for?
15. An oven is part of what?
16. Tell me something your mother bakes in the oven? What else does she bake in the oven? (Try to get all of the following: *a.* cake, *b.* bread, *c.* cookies, *d.* pie, *e.* meat.)
17. What does your mother cook potatoes in?
18. What does your mother do when you bother her?
19. At what time of day do you eat your breakfast?
20. Tell me all the different kinds of fruit you know. Then show the Test Picture Xc (Fruit), and point in succession, in the order given, to the following objects. Score as in question 11.

a. apple	*e.* lemon	*h.* strawberry
b. banana	*f.* cherry	*i.* cabbage
c. oranges	*g.* grapes	*j.* pumpkin
d. peach		

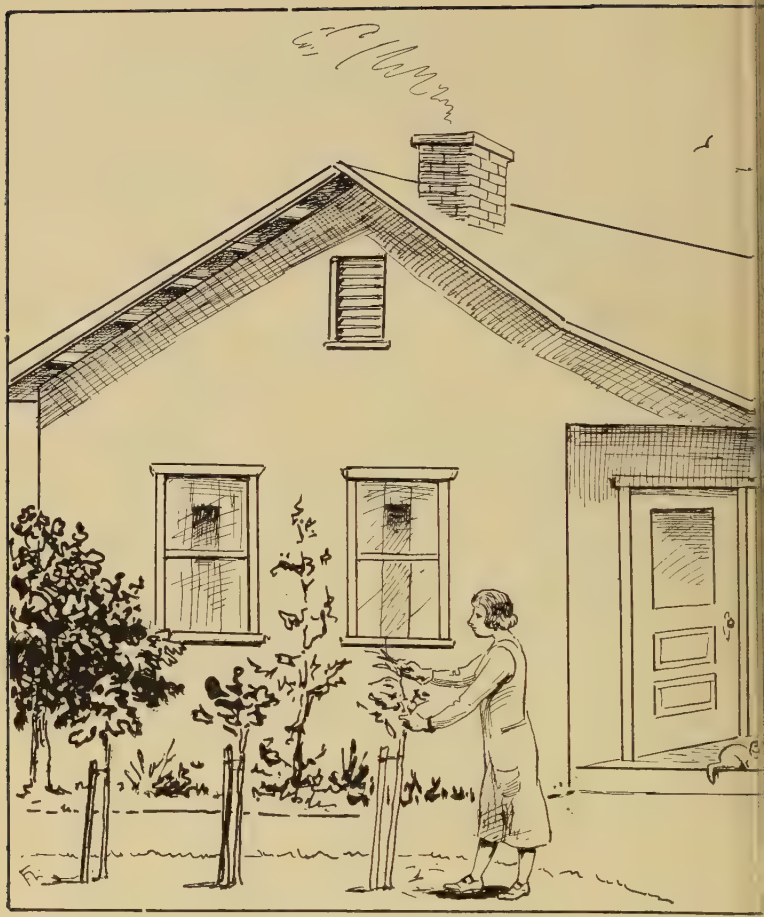
21. Do you know anybody who doesn't like cheese? Who?
22. What color is lettuce?
23. What color is corn?
24. What kind of corn is good to eat?
25. Tell me all the things that are good to drink. Try to get all of the following, by asking, "What else?"

a. water	*b.* milk	*c.* chocolate
d. cocoa	*e.* coffee	*f.* tea

26. What different things do you use to eat with? What else? Try to get:

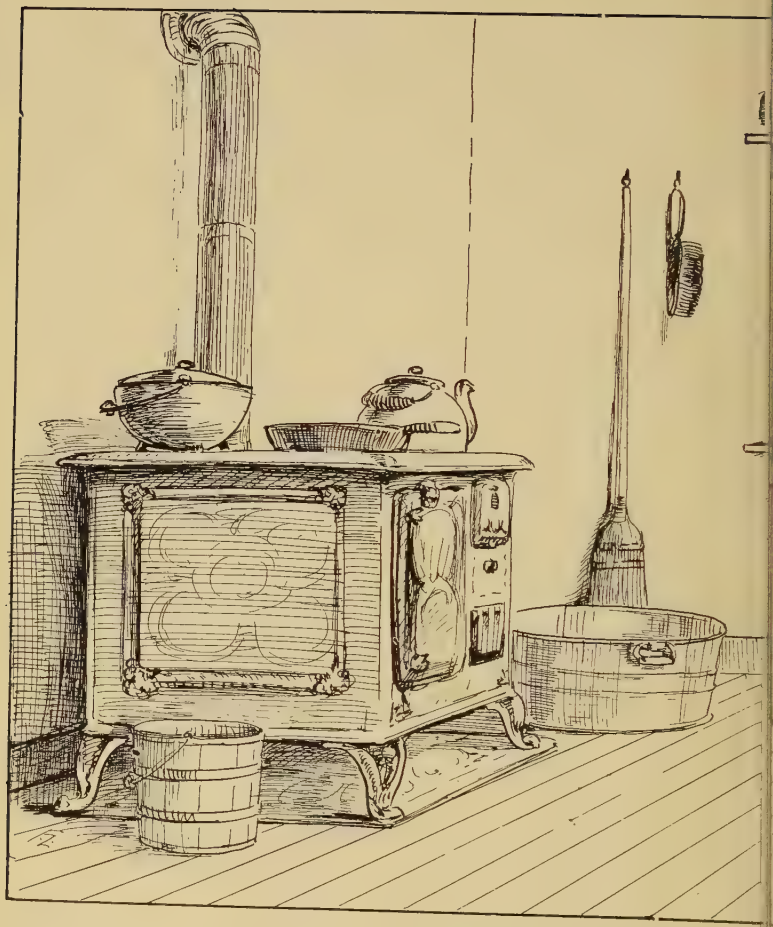
a. knife	*b.* fork	*c.* spoon

27. Why is a radish like onions?
28. Tell me something that is kept in a bottle.
29. What do we call the sides of a house? Walls.
30. What do we call the top of a house? Roof.
31. What kind of water do you like best to wash your hands in, cold, warm, or hot?
32. What do you need when you take a bath?



TEST PICTURE FOR VOCABULARY TE

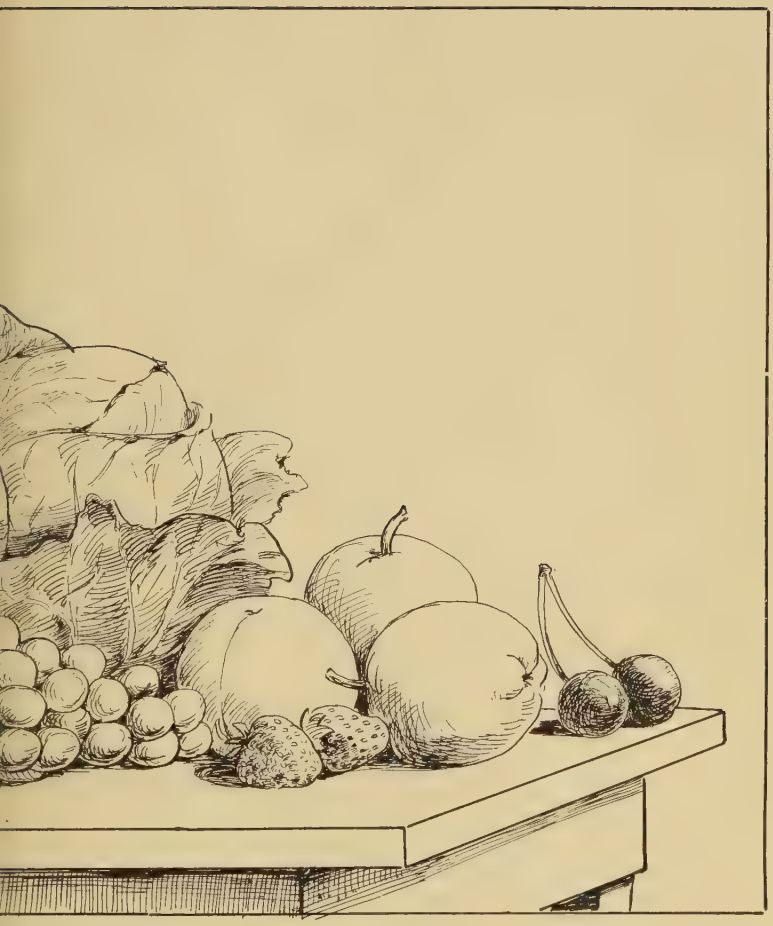
A. PLAYING HOUSE. (See page 99)



TEST PICTURE FOR VOCABULARY TEST X-B.

YING HOUSE — THE KITCHEN. (See page 99)

Test Picture for Vocabulai



CST X-C. FRUIT. (See page 100)

a. Water *b.* Soap *c.* Towel

33. What do you use to fix your hair neatly in the morning? What else could you use?

a. Comb *b.* Brush

34. What do you do when company is coming to your house?
35. If a bird flew into your home, what would you do?
36. Suppose you were tired and sleepy, what would you like to do?

Test XI. Telling Time

Directions: Have the child seated at a low table opposite you. Ask the questions below in the order given, and score by entering in the record the numbers of questions which the child does not seem to understand, or which he answers incorrectly.

1. At what time do you go to sleep?
2. Can you tell me the names of the days in the week?
3. Can you tell me the names of the months?
4. When does the moon shine?
5. What day of the week is it to-day?
6. What day was yesterday?
7. What day will to-morrow be?
8. On what day do people go to church? Sunday.
9. At what o'clock do you wake in the morning?
10. Can you tell me what time it is now? Show the child a watch, or use a card clock face with movable hands.
11. Where am I putting my watch?

Test XII. Number Test

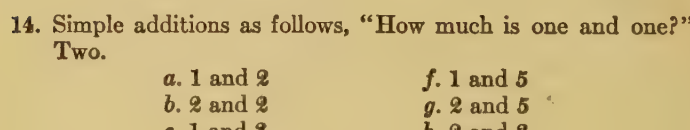
Directions: Have the child seated at a low table opposite you. Ask the questions below in the order given, and score by entering in the record the numbers of questions which the child does not seem to understand, or which he answers incorrectly.

1. How many dots are there in this circle?

In this one?

2. How many are there in the square?

3. Can you count? How far? (Give credit for as many points as there are numbers given in correct order up to the first mistake, but do not let counting go beyond twenty. Say, "*That's fine; that's enough.*")
4. Do you know any big numbers? Hundred, thousand, million.
5. Can you draw a square? Do it.
6. What shape is this? This?
7. How much is one and one? Two.
8. Where is the center of this circle? (Point to the circle in question 6.)
9. How many cents are there in a nickel?
10. How many pennies are there in a dime?
11. How many nickels are there in a dime?
12. How many wheels has a bicycle?
13. Work out concrete number recognition with paper dominoes, asking, "*How many dots are here?*" (1 to 10.)



14. Simple additions as follows, "How much is one and one?" Two.

a. 1 and 2	*f.* 1 and 5
b. 2 and 2	*g.* 2 and 5
c. 1 and 3	*h.* 2 and 3
d. 4 and 4	*i.* 4 and 4
e. 4 and 6	*j.* 5 and 5

15. If the child shows no ability on question 14, skip all of question 15. More simple additions. "How much is:"

a. 1 and 6	*e.* 1 and 7	*i.* 2 and 0
b. 2 and 6	*f.* 2 and 7	*j.* 1 and 8
c. 3 and 3	*g.* 1 and 4	*k.* 2 and 8
d. 1 and 0	*h.* 3 and 5	*l.* 2 and 4

m. 3 and 6	*p.* 3 and 7	*s.* 4 and 0
n. 3 and 0	*q.* 4 and 2	*t.* 5 and 0
o. 1 and 9	*r.* 4 and 5	

16. Is four more than five?
17. Is eight more than six?
18. How many eggs are there in a dozen? Twelve.
19. Is eleven more than a dozen?
20. Is a year longer than a day?
21. Is a year longer than a month?
22. Is a minute a very long time?
23. Is a farm a large field?
24. Do silk stockings cost quite a lot of money?
25. Do you have to pay for a ticket to ride on a train?

Test XIII. Association Test

Directions: Say, "When I say 'egg' what does it make you think of?" If the child answers, "Hen," or "Chicken," say "Yes." "When I say 'winter' what does it make you think of?" If the child says, "Snow," or "ice," or "cold," or expresses any other proper association word, say, "Yes: now we will play a game like that. Here are some more words: tell me what this makes you think of." Read in succession the list of words in the first column, and give the child a chance to offer an association word. If the response is not given readily, say the word again. If there is no response, enter the number on the record and go on to the next word. After completing the list, go over it again, giving only those words in the second column that the child could not give on the first round. If the child gives the corresponding association word or one equally acceptable, give credit by crossing out the corresponding number on the record sheet. (Accept any natural, sensible association, and give one point credit, even if the word is not the one in the list. But try to get the word in the list by saying, "Does it make you think of anything else?")

1. father — mother
2. girls — boys
3. brother — sister
4. fork — knife
5. garden — flowers
6. gum — chew
7. gold — silver
8. him — her
9. needle — thread
10. cream — milk
11. rain — wet
12. sit — chair
13. thirsty — drink
14. hammer — nail.
15. good-bye — hello
16. bang — gun
17. bank — money
18. food — eat
19. lesson — school
20. gate — fence
21. lawn — grass
22. hay — horse or grass
23. hose — water or sprinkle
24. honey — sweet
25. hungry — eat or thirsty
26. lake — water
27. lemon — orange
28. furniture — any article, chair, etc.
29. key — lock, door.
30. medicine — sick, doctor
31. gasoline — automobile
32. bridge — river
33. row — boat
34. skate — ice
35. slide — sled
36. saucer — cup
37. shoot — gun
38. birthday — presents
39. slippers — feet
40. teacher — school
41. umbrella — rain
42. Santa Claus — Christmas
43. pipe — smoke
44. ouch — hurt
45. pillow — bed, sleep
46. bee — honey
47. feather — bird
48. fireman — fire
49. football — kick
50. Heaven — God or sky
51. hide — seek
52. music — sing
53. Thanksgiving — turkey
54. Jack Frost — winter
55. Easter — egg
56. pack — cards

Test XIV. Playing Picnic

Directions: Say to the child: "Now we are going to play another game. We are going to play picnic, with questions and answers." Score the test by entering in the record the numbers of those questions which the child does not seem to understand, or which he answers incorrectly.

1. Where is a good place to go for a picnic?
2. Where can you go bathing?
3. Can you beat anyone running? Who?

4. Tell me all the different kinds of birds you know? Robin, blackbird, bluebird, woodpecker.
5. Where does a bird lay its eggs?
6. What game do you like to play most?
7. I wonder what would happen if you were on a teeter and the boy (or girl) on the other end jumped off?
8. Does a policeman have a badge? Where?
9. What grows on a stem?
10. Do you like ice-cream? How does it taste?
11. How many shells has a peanut? Is the outside shell good to eat?
12. If you wanted some candy but did not have a penny, what would you do?
13. What color are leaves in the summer?
14. Tell me something that grows on a bush.

Test XV. Simple Question-and-Answer Test

Directions: To give this test have the child seated at a low table opposite you. Ask him the questions, and score by entering in the record the numbers of questions which he does not seem to understand, or which he cannot answer.

1. What is your name?
2. Are you walking, standing, or sitting? What am I doing?
3. What do we call dirt when it is wet? Mud.
4. What does a conductor do?
5. What would your father use to dig a deep hole? Shovel.
6. What are blocks made of?
7. Have you ever built anything with blocks? What?
8. What are those boys doing? (Point to some activity in the room.)
9. What makes an awful noise?
10. What do you do with your ears? Hear.
11. Can you move them?
12. Do you know somebody who owns a store? Who?
13. What song are we trying to learn?
14. Who is talking to you?
15. What do we talk with?
16. Have you ever caught a ball? How?
17. Why are stairs like a hill?

18. What would you use to crack a hard nut?
19. If a dog and a boy ran a race, who would win?
20. What do we call a man who drives a horse? Driver.
21. What does a man take hold of when he wants to drive horses?
22. In what game do you call "Ready"?
23. What does you mother need for washing clothes? What else?
    a. Soap *b.* Water
24. Could she wash if she had neither?
25. What do you use a looking-glass for?

Test XVI. Advanced Question-and-Answer Test

Directions: To give this test have the child seated at a low table opposite you. On the table you should have an open letter, a sheet of paper, and a pencil with a broken point. Ask the child the questions, and score by entering in the record the numbers of questions which he does not seem to understand, or which he cannot answer.

1. What is this? (Have a stamped, addressed envelope, with a letter inside. Point as you ask the questions.) Envelope, stamp, letter, address.
2. What work does a fireman do?
3. What does a nurse do?
4. Where do we plant seeds to make them grow? In the ground.
5. What is the last word you said?
6. Have you ever been at a fair? What did you see there?
7. What would come out of your finger if you cut it with a sharp piece of glass? Blood.
8. When anybody says "Whoa" to a horse, what will he do? Stop.
9. What would you do if a boy brought a puppy along to school?
10. Do boys sometimes bet when they run a race? Is it right to bet?
11. Did you ever see a man wear a chain? What was it for?
12. What would you do if a dog bit you?
13. Tell me the name of one aunt you know. What do you call her husband? Uncle.
14. Why do they send a man to jail?
15. How would you feel if I looked cross at you?
16. If your dog or cat died, how would you feel?

17. If your mamma told you not to touch something and you did anyway, what would she do?
18. Does a man chop wood with a saw? (No.) With what? Axe or hatchet.
19. What do cows do?
20. If your papa told you a story you liked, what should you say to him? Thank you.
21. What do we call a man who acts in a crazy way in a circus?
22. What is another name for a flying machine?
23. Haven't you heard a bottle pop? What makes the pop?
24. Are your tiny toe and your big toe close together? What is between them?
25. Who is very dear to you?
26. (Show the child a pencil with a broken point and say:) What is the matter with this pencil?
27. If your mother wishes to get a letter from a friend, what does she do?
28. What does snow change into when it melts in the sun?
29. Do you see a crack in the walls of this room? Where?
30. What does a dog do when he is mad?
31. If you thought a boy might hit you, what would you do?
32. If you miss a train, what do you have to do? Wait.
33. If a boy is going away on the train, what do we say after he goes? He is gone.
34. What do we call a man who takes a thing that does not belong to him?
35. Have you known anybody longer than me? Who?
36. If I cut myself, what ought I to do?
37. If a cat got killed, what should we do about it?
38. Tell me something that looks cute?
39. What game do you think is most fun?
40. What child will you choose to play this word game next?

Test XVII. Yes-and-No Test

Directions: Proceed as in the other questioning tests, with the child seated at the table. Ask the questions below in the order given. The child is to answer only "Yes" or "No." Score by checking on the record sheet the corresponding numbers for all questions which are not answered correctly.

1. Can an aeroplane fly over houses?
2. Are you afraid in the dark?
3. Do you always come to school on time?
4. Are you an American?
5. Is a bear a wild animal?
6. Is a cat a tame animal?
7. Is a bear a large animal?
8. Is a cat a large animal?
9. Is an ant small?
10. Do you ask your mother questions when you are asleep?
11. Would you be sick if you ate too many apples?
12. Would you get well if you ate more?
13. Has your aunt an automobile?
14. Does your mother use flour to make a cake?
15. Does she use eggs?
16. Does she use sugar?
17. Would you like the cake, if she used soap in it?
18. Can a blind man see the sidewalk when he walks?
19. Is a board made of iron? (No. Of what?) Wood.
20. Does candy taste like sugar?
21. Will coal burn?
22. Can you cover a table all over with a handkerchief? With a napkin? With a tablecloth?
23. Is a mouse bigger than a rat?
24. Is a string as strong as a rope?
25. Does the sun shine at night? (Accept "Yes" from a very bright child, who gives "the other side of the world" explanation, if you say "Where?")
26. Can you look through a board if there is no hole in it?
27. Is a brick as soft as a block of wood?
28. Is a cracker dry?
29. Does all mean more than some?
30. Aren't you a boy (or girl)?
31. Can babies climb over fences?
32. Is a bag always made of cloth?
33. Do all birds have a bill? Where is it?
34. Can a baby bite through a penny?
35. Does a dog think a bone is nice to eat?
36. Will a rubber ball bounce high?
37. Is it easy to break a biscuit? Are the pieces good to eat?
38. Are pigs careful to keep out of the mud?

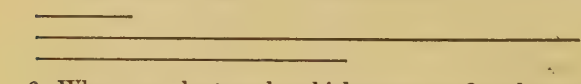
39. Did you ever bump your head against a corner? Did it hurt?
40. Is a card more than three cards?
41. Does candy taste like salt?
42. Could a man dance if he had no feet?
43. Are there many chairs in this room?
44. Does a dandelion smell nice?
45. Do grapes grow in a bunch?
46. Will a pig get fat if you feed him lots?
47. Would you feel happy if you fell off a high wall?
48. Is lettuce good food for a rabbit?
49. Is a goose bigger than a duck?
50. Do you need a match to light an electric light? A gas light?
51. Is it wrong to steal?
52. Can you read?
53. Can you eat soup with a fork?
54. Can you sew without thread?
55. Do you eat supper in the morning?
56. Are you sure when you guess?
57. Can everyone swim?
58. Can you make a swing without a rope? (If the answer is "Yes," ask "How?" Accept a reasonable substitute like wire or chain.)
59. Does steam stay in the teakettle?
60. Do you have to run much when you play tag?
61. Is a coat and vest a suit of clothes?
62. Is a telephone wire stronger than a clothes line?
63. Are there many trees in the woods?
64. Can you write your name?
65. Do mothers love their children?
66. Do you bring your lunch to school?
67. Does Santa Claus come at Thanksgiving time?
68. Did you meet any men you knew when you came to school to-day? Who?
69. Is jelly sour?
70. Do you get dirty if you dig in the sand with your hands?
71. Are there flowers in the school yard?
72. Is any girl writing on the board? Where, or Who?
73. Does a farmer have much land?
74. Can you step as high as this stick?
75. Do you like to be alone in the dark?
76. Am I you?

77. Do men work because they want money?
78. Do you belong to a Sunday school? What do you do there?
79. Can the wind blow when it is raining?
80. Will water boil without fire?
81. Can you open a drawer if it does not have a handle?
82. Is Jack a girl's name?
83. Is every child in the class busy?
84. Would you be mad if a boy knocked you down?
85. Is there an office in our building? (If there is not, ask "Where is there an office?")
86. Is gravy good to put on potato?
87. Do we live in a town?
88. Do you think it is naughty to kill a butterfly?
89. Does a pigeon have a tail?
90. Do soldiers ever march in a parade?

Test XVIII. Alternatives Test

Directions: Have the child seated at a low table opposite you. Ask the questions below in the order given, and score by entering in the record the numbers of questions which the child does not seem to understand, or which he answers incorrectly.

1. Does a worm walk or crawl?
2. Does a brake stop a car or start it?
3. Which comes early in the day, dinner or breakfast?
4. Which is more, a drop of water or a glass of water?
5. Which line is long? Which is short?



6. When you plant seeds, which comes up first, leaves or flowers?
7. Do you walk or run when you are in a hurry to get home?
8. Do we take new shoes or old ones to the shoe shop to be fixed?
9. Do old shoes or new ones feel tight?
10. Does dandy mean fine or bad?
11. Is this my book or ours?
12. Does a soldier fight or paint pictures?
13. Would you rather eat a ribbon or a sandwich?
14. Is a pattern made of straw or paper?

15. Does your mother use a pan or a plate to bake things in the oven?
16. Do tears come into your eyes when you laugh or when you cry?
17. Does save mean give away or keep?
18. Do you pat or pound with a hammer?
19. Do you peep with your eyes or your ears? How does a chicken peep?
20. If you pour water on paper, will it soak in or will the paper be dry?
21. If your daddy said, "Let me kiss you," should you say, "Yes, sir," or "Yes, ma'am"?
22. Do boys or girls play with dolls?
23. (Say to the child, *Listen*, and then tap on the table several times, and ask:) Did I knock on the desk more than once?
24. Do we plant seeds in the spring or in the winter?
25. Is a pole a big stick or a little one?
26. Are flowers pretty or funny?
27. Does it seem hot or cold in this room?
28. Is a boy naughty or good if he does not mind his mother?
29. Do you get more fresh air when the windows are open or closed?
30. Was this book turned by you or by me?
31. Is it real cold in summer or in winter?
32. If you rode on a train to (any city the child is probably familiar with) and your brother rode on a horse, who would get there first?

Test XIX. Reasoning Test

Directions: Have the child seated at a low table opposite you. Ask the questions below in the order given, and score by entering in the record the numbers of questions which the child does not seem to understand, or which he answers incorrectly.

1. Do you believe birds can sing? Why?
2. Would a mouse chase a cat? Why not?
3. Why do we say window glass is clear?
4. Is a park a good place to have a party? Why?

5. Does your mother hang clothes in the sunshine after they are washed? Why?
6. Why do you have to be careful when you pick roses?
7. May I throw broken glass into the street (or road)? Why not?
8. Were you ever sent home when you were playing at somebody's house? Why?
9. Do you think pop is good stuff to drink? Why? or Why not?
10. Would a fly die if he got stuck on some fly-paper? Why?
11. Do you slip so easily in the summer as in the winter? Why not?
12. Are your eyes really closed when you are sleeping? How do you know?
13. Do peas and beans grow in the same way? How?
14. Would you care if someone broke your hat? Why?
15. Can you hear a loud noise even though you are sleeping? Why?
16. Shall we stop this game? Why? or Why not?
17. Do you like getting wet in the rain? Why? or Why not?
18. If a man shot a gun at some dogs, what would happen?

Test XX. Language Contractions Test

Directions: Say to the child: "Sometimes when we are in a hurry to say things, we say them differently, more quickly — like this. If I am in a hurry and want to say, *I am going*, I say, *I'm going;* or if I want to say, *It is here* real fast, I say *It's here.* If you were in a hurry, what would you say for *We are playing a game?*" If a child misses this, try several others. If he understands the game try all of the following sentences:

1. Let us go.
2. I have seen a circus.
3. It is time to go home.
4. I am five years old.
5. I will help you.
6. He is a big man.
7. Here is an apple.
8. That is my hat.
9. We will go home.
10. We are playing a game.
11. We have seen many pictures.
12. What is that?

How to make the pupil's record. Below is given a record

sheet for the child's work on the tests. A blank like this should be available for each child. The simplest way to keep the record is to check the numbers missed, except in cases where different instructions for scoring are given in connection with the test.[1]

RECORD SHEET FOR STORMZAND-McKEE PRIMARY VOCABULARY TESTS

Pupil's Name.....Date.....
Age.....years.....months. Pupil's Mental Age...
On.....Test.

Test I. Color Test.
Colors missed. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.
Additional colors named.
Check questions missed. 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23.

Test II. Following directions.
Check directions not understood. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11*a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, *u*, *v*, *w*, 12*a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, 13, 14, 15, 16, 17, 18, 19, 20*a*, *b*, *c*, *d*, *e*, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39.

Test III. The Circus Parade.
Check words missed. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19.

Test IV. Taking a Trip.
Check words missed. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15.

Test V. On the Farm.
Check words missed. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19.

Test VI. Playing Cards.
Check pictures or words not known. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33.

Test VII. Definition by Uses.
Check words not adequately defined. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,

[1] Outline score cards can be mimeographed by the school. In making such score cards, blank spaces may be left to write in the numbers "missed," instead of reproducing all numbers to be checked.

11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75.

Test VIII. Synonym Test.

Check numbers of words missed. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23.

Test IX. Opposites Test.

Check numbers of words missed. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90.

Test X. Playing House.

Check numbers of questions missed beginning with 5*a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, 6, 7, 8, 9, 10, 11*a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, 12, 13, 14, 15, 16*a*, *b*, *c*, *d*, *e*, 17, 18, 19, 20*a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, 21, 22, 23, 24, 25*a*, *b*, *c*, *d*, *e*, *f*, 26*a*, *b*, *c*, 27, 28, 29, 30, 31, 32*a*, *b*, *c*, 33*a*, *b*, 34, 35, 36.

Test XI. Telling Time.

Check numbers of questions missed. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.

Test XII. Number Test.

Check numbers of questions missed. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13*a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, 14*a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, 15*a*, *b*, *c*, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l*, *m*, *n*, *o*, *p*, *q*, *r*, *s*, *t*, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25.

Test XIII. Association Test.

Check numbers of words missed. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55.

Test XIV. Playing Picnic.

Check numbers of questions missed. 1, 2, 3, for 4 ( ) enter number of birds named, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

Test XV. Simple Question-and-Answer Test.

Check numbers of questions answered incorrectly. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23*a*, *b*, 24, 25.

Test XVI. Advanced Question-and-Answer Test.

Check numbers of questions answered incorrectly. 1*a*, *b*, *c*, *d*,

2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40.

Test XVII. Yes-and-No Test.

Check numbers of questions answered incorrectly. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88.

Test XVIII. Alternatives Test.

Check numbers of questions answered incorrectly. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32.

Test XIX. Reasoning Test.

Check numbers of questions answered incorrectly. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18.

Test XX. Language Contractions Game.

Check numbers of statements for which the proper contraction is not given. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

Administering the vocabulary tests. The amount of time required to give the tests may seem an insurmountable difficulty to the teacher, but the following considerations should be borne in mind.

1. The tests are instructional material as well as testing material. In the picture tests, for example, the teacher may, after each test has been completed, show the child the objects which he has missed. The same thing can be done with practically all of the other tests, giving the answer immediately after it is recognized that the child does not know, and after a memorandum of his failure has been entered on the record.

2. The tests are intended primarily for *diagnosis*, not for rating the children by the standard scores as superior, average, or inferior. The record sheet, if carefully made, gives the teacher valuable information as to the vocabulary-development work she should do with each child.

3. The tests can also be used as a substitute for the intelligence test. Several of the tests are especially valuable for this purpose. Standards showing parallels between the scores on these vocabulary tests and corresponding mental ages will shortly be published.

4. The tests are intended as a program for a systematic inventory of the child's vocabulary and his stock of ideas. The program may spread over the whole of the first semester's work, and the results can be used as a basis for instruction guidance for all of the first year, and in some cases for several years.

5. The child's general mental development can be determined from several of the tests as accurately as from the whole battery of tests. It is advisable for the primary teacher to take a considerable part of the school time during the first few weeks to get an approximate rating of all the children by giving one or two of the tests to each child. The more backward ones revealed by this first sampling survey should then be diagnosed more fully, and as early as possible. A considerable portion of the free-play periods may be spent in this individual testing program.

6. The tests need not be given in the order in which they are numbered. If several tests are given to the child at one time, it will probably be advisable to alternate the picture tests with the verbal tests.

7. The test materials, as lessons for the development of the child's vocabulary, are especially suitable for the work in language development as outlined in Chapter XIII.

(*d*) *Test for emotional traits*

One of the most important factors in determining the success and progress of the child in school is his attitude toward school work and school conditions. This attitude consists in part of fixed opinions, or prejudices, but more commonly

of certain fears, hopes, desires, likes and dislikes in which the element of feeling is more prominent. Some children are possessed of these emotional obsessions to such an extreme degree, that they often interfere with school work, and may even render the child a disciplinary problem. Some of these emotional disturbances may be due to serious physical or nervous disturbances; others may be purely psychopathic conditions due to serious mistakes in the child's home training, or to unfortunate home conditions or experiences. Such phases of neurotic or psychopathic condition require expert clinical examination and treatment. The teacher should not presume to experiment with these cases on the basis of superficial reading of psychoanalytic or psychiatric literature. Cases where emotional disturbances are apparent enough to interfere with school work should be brought to the attention of one's superior school officer.

Regrouping and promotion. On the basis of any or all of the tests suggested in this chapter, and as the first semester's work in reading develops, the teacher will be led to regroup the children in her class, if she has started the year's work with several sections, as was suggested in Chapter VI. Perhaps the earliest satisfactory sectioning will be on the basis of intelligence, if the children have been tested by the methods suggested in this chapter, or if the teacher finds it feasible to do the testing herself. A few months later, as the child's spoken vocabulary is explored by the use of the vocabulary tests, some modification of ability-groups may have to be made on the basis of experience. Then, before long, the progress or lack of progress in reading will occasion further adjustments in section-groups. The child's progress in reading will probably become the chief test in determining whether he should be promoted or retained in the class at the close of the first semester.

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CHAPTER VI

MANAGEMENT AND DISCIPLINE

1. The meaning of "classroom management" — What is included in the term — Attention to physical conditions of the schoolroom — Artistic conditions of the room — Control of recitation and study periods — Alternate study and activity — Handling transitions — (*a*) Change between periods — (*b*) Various groups working simultaneously — (*c*) Passing at recesses, etc. — Control over the social attitudes of the pupils.
2. The meaning of discipline — Constructive vs. repressive discipline — Preventive discipline — Dealing with emotional cases — Socializing the discipline problem — How to build up group spirit — Social and authoritative punishment — Standards of order — Illustrative cases.
3. General principles in discipline — Anticipation and routine — Planning and preparation — Disciplinary personality — Training in choosing — The laws of learning apply.

Selected references.

1. The meaning of classroom management

What is included in the term "classroom management"? The teacher has certain definite duties which may be broadly divided into the general concepts of instruction and management, but these two activities merge into each other so gradually that it is not always possible to classify all phases of a teacher's work as belonging to either the one or the other. Management is merely a means to an end; the instruction or guidance of the pupil in development and learning is the end. Broadly speaking however, we may say that classroom management involves the following:

1. Attention to the physical and artistic conditions of the classroom.
2. Control over the machinery of recitation and study periods.
3. Control over other work activities of the pupils.
4. Control over the social attitudes of the pupils.

All of these are the background for effective instruction, and involve also problems of discipline from both the preventive and constructive angles.

Attention to the physical conditions of the schoolroom. A teacher's general plans for classroom management will be affected to a considerable extent by general aims and by the nature of the equipment. Plans for management will be very different in the old formal type of room, with its six rows of seven or eight fixed desks and seats, from what the plans will be in the modern informal room with movable tables and chairs and a general arrangement of work centers.

This matter of furniture arrangement is a part of the general problem of the effect of physical conditions on the conduct of the children. By conduct is not meant merely the questions of orderliness, but the study or learning activities as well. Among the physical conditions affecting the conduct of pupils we must include such general factors as heating, lighting, ventilation, and sanitation.

Much of the management of these physical factors is a matter of prearrangement or conscious planning with special reference to the time of day and the schedule of work. The more constant factors, when they involve arrangement by the teacher, should be carefully thought out and should then be made a matter of regular routine attention. When children are to coöperate in the arrangement of furniture, tools, and materials, this must be explained at first, but should all be reduced, as soon as possible, to routine on their part. The teacher must, however, be alert to anticipate any emergency that may require a departure from such routine. Readiness to direct and a prompt and confident handling of emergency situations will do much to prevent disorder and confusion. Even a wrong direction, in such cases, is preferable to hesitation, which may result in pupil initiative that may have to be checked or corrected. No specific rules can

be laid down with reference to the regulation of many of the physical factors, because arrangements for heating, lighting, ventilation, sanitation, and the like vary so greatly in different schoolrooms. Certain general principles can be set forth, however:

1. The teacher should consciously attend to all such physical conditions as she feels may affect the order of the room or the comfort, health, and efficiency of the pupils.
2. The original arrangements affecting those physical factors are not the province of the teacher, but of the superintendent and school board in the planning and construction of the building. The teacher has a duty to make the best of such conditions as she finds, with possibly the duty of advising such alterations as are feasible.
3. Blinds should be drawn evenly. A too intense light can always be subdued by curtaining.
4. It is ideal, in primary units, to have toilet rooms adjoining the classroom.
5. There should also be some provision for a sink and a hot plate in each primary unit, easily accessible to the first, second, and third grades, as well as the kindergarten.
6. A breaking away from the traditional classroom building suggests an improvement in light and heating in the form of sun porches, screen porches, and pergolas adjoining the classroom proper.
7. There should be plenty of sunshine, but the children should not sit facing it.

Artistic conditions of the classroom. It will not be necessary to repeat in this connection what was said in the first three chapters about the architecture, arrangement, and equipment of the primary room. These elements were there discussed from the point of view of modern adjustments to the new type of work-and-play activities that are to be characteristics of progressive primary instruction. Here reference is to be made to certain artistic accessories of the primary classroom, whether it be of the old or the new type in structure and equipment.

Any visitor going through all the rooms of a typical city school will be struck by the contrast that is usually presented between the artistic appeal of the kindergarten room and the barren lack of such appeal in most of the other rooms. One of the elements that help to bridge the gap between the kindergarten and the first grade is the tendency of primary teachers to imitate the artistic elements of the kindergarten. Subconscious effects on the spirit and the tastes of children are wrought by thoughtful attention to these æsthetic factors. The artistic accessories of the room that should be given some thought are the curtains, pictures, flowers and their containers, and the arrangement of the furniture. In providing such æsthetic elements, simple and inexpensive materials are often as effective as more costly ones. Some of these simple materials may be more permanent than the others, and school funds may be drawn on for them. Others the teacher will be inclined to provide at her own expense, especially if she craves an artistic environment for the workshop in which she spends most of her day. The coöperation of the children in providing pictures and flowers can also be enlisted.

Control of recitation and study periods. Passing from the indirect management of the room environment to the more direct problems of the management of the children themselves, we have to deal with such problems as the arrangement of the daily program, the direction of the activities of the pupils outside of regular recitation and study activities, the handling of transitions, and finally the problem of discipline.

With reference to the first of these a number of general principles may be stated briefly:

1. It is well to avoid having the day broken up into a large number of very short periods.
2. Let the work in reading be made the core of the program,

with provision for at least one long period a day for each section of the class.

3. Similarly provide for a long period of free-play activity for the room as a whole, with as free provision for groups to spend their time in the various centers as the room and equipment will allow.
4. Provide as much alternation between quiet work and activity-exercises as can possibly be arranged.
5. Plan very definitely for each day just what seat activity one section will be engaged in while the other sections are working in group "recitation."
6. Be forehanded with the planning and provision of all materials necessary for this seat work, and make use of all possible devices you can find to make the work self-directive and adequate to keep all going the full time.

Alternating study and activity. In one of the principles given above under the topic of program-making, it was stated that activity should alternate with study and recitation periods. In addition to the two recess periods each half day that are given primary children in all progressive schools, and in addition to the occasional breaks made by relief and relaxation exercises with a few moments of breathing, calisthenics, or a march about the room, or a reclining of heads on folded arms at the desks, the child's school day can further be kept from irksome monotony or fatigue by having such periods as construction work, play, dramatization, folk dances, and music alternate with the study and recitation periods.

Handling transitions. A transition is a change period between classes. It is a scene shifting, and must be rapid and noiseless so that the thread of the lesson is not lost sight of. For instance, when a class finishes the dramatization of *The Three Billy Goats Gruff*, and the teacher wishes to link the past period with some seat work, she bids the pupils return to their seats, making no more noise than a Billy Goat would make if he were walking on the grassy hill slope.

Transitions are difficult to manage unless carefully thought out and planned. Carrying over an interest situation from one class to another, as is done in stage craft or short-story writing, is the most effective way of meeting the change. The work should be so planned as to dovetail and thus overcome awkward transitions, as when the teacher makes an assignment which authorizes the pupils to pass to another type of work on completion of the assigned task. In this way the children pass, one at a time, to the new task on completing the old, and avoid the not unusual "mad rush" which attends a large-group exchange of tasks.

The program thickly scattered with transitions is consequent upon the schedule made up of too short periods of work.

(*a*) *Changes between periods.* It has already been stated in the general principles governing the regular daily schedule that the number of transitions can be greatly reduced by careful program planning. Because of the variety of activities that are possible and advisable in primary work, many teachers have fallen into the error of having the whole group pass from one activity to another in a list of twelve or fifteen, with very short time periods of from ten to twenty minutes each. The division of the half-day into three or four general types of work, in practically all of which several distinct small groups are at work at different things, with only a few general transitions, will result in much less disorder and confusion.

(*b*) *Groups working simultaneously.* Imagine a situation in which the teacher is conducting a reading lesson with group I. The children in groups II and III have been assigned to their work, as follows:

Those who are in the midst of their construction work may go on with it. As you finish put your materials neatly away, and choose a book at the browsing table to read. You who have begun no

construction work, may look at your progress cards and work as many reading and number games as you like, checking and recording each as it is finished.

With an assignment of this nature the teacher can go to her reading group for a long or short period, knowing that the other pupils will be purposefully occupied. As the pupils of groups II and III complete the task before them they pass on to the next task, making the transition individually. Transitions of this type are going on continuously, but, because they are individual, they are marked with quiet and order.

Another assignment, which gathers the group together at the conclusion of its work for a class activity, might be illustrated in the following:

Group II will come to the library center for reading. Those children in groups I and III who are working reading puzzles may go on with them, and, when they are through, pass quietly out to the play apparatus and sand. Those children designing and making the curtains for the closets may try to finish that work now, and then pass out to the playground to join the rest.

As the members of group II read in turn to their teacher they pass out of the room to the playground. In this way the entire group is assembled on the playground for an excursion, story, game, or recess period, and again, because the transition is anticipated by the teacher and executed individually by the children, it involves a minimum of noise and confusion.

(*c*) *Other formal transitions.* Certain other formal transitions, such as recess, fire drill, and dismissal, which include the entire school, call for formal, teacher-imposed instruction. At these times the group should act in company, not as they may or may not be individually moved.

One of the most difficult things to handle in transitions is the effect of individual differences on an assignment, since it

affects the completion of the task. Often those finishing their tasks ahead of others wander about aimlessly, sit idly doing nothing, or annoy their neighbors. To meet this situation one should assign work on different levels, or provide an additional or enriched program for the rapid workers.

Several typical assignments, involving the extra activity necessary for those who work faster, will illustrate how this problem of individual differences may be met:

(1) As you come in from recess, children, you may go to the table of reading games. Choose the next game in order on your progress card and take it to a table to play. When you feel quite sure that it is correct, take it to a pupil-teacher to be checked. Then mark up your score on your progress card and choose the next hardest game. Let us see how many games we can work correctly and how many new squares we shall have colored on the progress card.

(2) On my study table I have many one-page stories about things we have seen on our nature tramps through the fields and into the parks. When you have put away your play materials, you may take one of these pages to your seat. After you have studied it and are quite sure you know what it is all about, you may come up and read it to me. Then you may fasten it into your cover and draw a picture on the opposite page that will tell about it. You may read just as many stories and draw just as many pictures to tell about them as you have time for.

(3) To-day we are to work out our Indian sand-table. In big writing on the board, you will read what the members of your group are to make.

Boys in group I make Indian chiefs.
Girls in group I make Indian squaws.
Boys in group II make buffaloes and wild animals.
Girls in group II make Indian papoose and children.
Boys in group III make trees and woods.
Girls in group III make Indian tents.

If you have any time left, after you have made and placed your article on the sand table, you may make any other Indian thing that you would like to take home.

Control over social attitudes of pupils. One of the distinctive problems of the primary room is to develop a number of new social adjustments in the children. Coming to school brings the child into a new social atmosphere, and a much broader one than he has been accustomed to in the home. The primary room gives the first training in group relationships, besides being the background of a number of new individual contacts. Most of these relationships are unavoidable. The child cannot choose his associates as he does his playmates out of school. Parental selection and protection are also out of the question in such school associations.

This is strikingly borne in on one when a visit is made to a room in a cosmopolitan city district. There is often a strange mixture of races and social and economic elements. The child's natural solution of social and racial differences is much more sensible than that of the adult, with his race prejudices and social distinctions; but the relationship of the individual to the group, and the personal relationship of one child to another in work and play, still give occasion for some of the most difficult problems in management. The childish frictions growing out of emergencies, and accidents, and selfish interests in play, and in the freer activities of the room, or the mischievous and restless teasing of one another, require constant supervision and adjustment. In a general way, in dealing with these matters the teacher finds her best opportunities for the incidental training in civics and in morals and manners that the primary room affords. The prevention of such friction by careful planning and anticipation and routine will be taken up later in this chapter. The treatment of infractions of courtesy, of consideration, and of group coöperation carries us into the problem of discipline, which constitutes the topic of the next general section.

2. The meaning of "discipline"

Constructive vs. repressive discipline. The term "discipline" is used, in educational literature, in several distinct senses. In older educational discussions the term was used as an equivalent for such expressions as "training" and a "course of training." This use is more closely related to its etymological meaning. The word is still commonly used with this meaning in some connections, as when we speak of "mental discipline" or "formal discipline."

From such a use the word came to be applied to the means as well as the end, to the control of conduct as well as the training. At present the term is more commonly applied to controlling conduct. We use the expressions school discipline and disciplinarian, both with reference to the teacher's activities in keeping order and preventing disorder, and with reference to punishment or means and methods of dealing with disorder. In more recent discussions of school discipline larger emphasis has been put on the positive, constructive side of training pupils in self-control and in social conformity, as distinguished from the negative side of prevention or punishment of disorder.

This new emphasis is due to several factors. The school is assuming a larger responsibility than formerly for the moral training of the child. It is doing this as a matter of advanced educational idealism, and also because nowadays more of this obligation is being surrendered by the home. The school is also becoming more socializing in its conscious aims than at other periods, and more socialized in its methods. Movements for throwing the responsibility for school order and government on the pupils have become prominent, especially in the high schools and upper grades, almost to a faddish degree. This substitution of group spirit for the teacher's authority can be carried out, to a considerable degree, even among the very youngest pupils,

but some limitations on this method of pupil government have to be set in the lower grades. With the younger pupils it is not possible to put this group control of conduct on a rationalized basis, as can be done with older pupils. Instincts, rather than reasons with reference to standards of good and bad conduct, have to be appealed to. Neither is it feasible with the younger pupils to leave the matter of punishment for infractions of rule to either the group judgment or the representatives in a group government.

This virtually means that the primary teacher may enlist group sentiment and attitude, and direct group routine toward the goal of orderliness, courtesy, and consideration for the rights of others, but she cannot utilize group judgment for the punishment of disorder. The group may be led to coöperate with the teacher, but group standards and group action cannot be substituted for adult judgment and authority. Experience has shown that there is considerable doubt whether student government can be carried that far among the students in high school, or even in the university.

Preventive discipline. Classroom discipline is one of the most unsatisfactory problems that has to be dealt with in the training of teachers. The importance of its bearing on success in teaching cannot be ignored. Several studies have been made which indicate that so-called "inability to discipline" is the most prominent of all causes for failure in teaching. Similarly, superintendents rank "ability to discipline" as one of the leading merits or factors in success to be considered in rating teachers. Further, in investigations made by normal schools among their graduates, it is one of the most common criticisms of the teachers' preparation that they were not taught how to meet the discipline problem. Even where courses dealing with the subject of discipline have been given, the complaint is still common that the textbooks and the instruction were of little value.

More recent literature dealing with problems of classroom management and discipline indicates that the problems of order and disorder, of prevention and punishment, have to be considered with three fundamental principles in mind:

1. The problem of discipline has to be approached indirectly; it cannot be solved by direct attack.
2. General rules to be applied to specific cases are useless, because of the variations in conditions and circumstances.
3. Persistent "disciplinary cases," especially under a teacher who is generally successful, must be made the subject of careful physical and psychological examination.

It has been shown by several prominent writers on the subject that good order or disorder in the classroom are largely conditioned by such factors as the anticipation or prevention of disorder by carefully planned routine in managing the activities of a class; that adequate preparation on subject-matter and method are absolutely essential to the maintenance of interest and learning activity; and that certain traits of personality are absolutely essential in preventing disorder or restoring order, without making punishment for flagrant infractions necessary.[1]

It is impossible to lay down general rules as to what a teacher should do to prevent or punish such typical classroom transgressions as whispering, talking, inattention, discourtesy, eating, cheating, mutilating school property, and the like. It is impossible to say that you should keep children after school ten minutes for some offenses, a half-hour for others, or that children should be reported to parents for this and to the principal for that, or under what circumstances corporal punishment is justified.

Dealing with emotional cases. The new psychology and

[1] Compare, for example, Judd: *Introduction to the Scientific Study of Education*, pp. 244–47.

the mental-hygiene movement are giving us new light on the problems of school discipline. Erratic behavior, especially of the persistent type, is now largely being attributed to abnormal physical and psychological states. Studies of this sort tend to show us that the best approach to the problem of correction for unusual, unsocial, or immoral conduct on the part of school children is to make a study of each case as an individual one, and as a problem in correcting habit rather than in combating heredity. A recent book[1] on this subject makes us quite ready to accept the claim that "the main qualification for a teacher, especially in the primary grades, is not the technique of teaching but an understanding of human nature, and this understanding can only come by a study of the maladjustments" of a social sort that are being opened up by students in the fields of psychoanalysis and psychiatry.

Socializing the discipline problem. The problem of discipline from the point of view of infractions of orderly behavior, in the primary room as well as in the more advanced grades, should be put, as fully as possible, on the plane of social or group influence. This can be done in both a positive and a negative way. The influence of a group spirit in the direction of orderliness, coöperation, industry, and good will toward the teacher and all other pupils is a contagion that will carry a class much farther than the effort to attain such ends by scolding, lecturing, nagging about rules, commands, or prohibitions.

When this positive spirit has been engendered in the group, it can also be used as an effective punishment as well as a preventive. Class disapproval of misconduct or of lack of coöperation and good will can isolate an offender most effectively. The offense is felt to have been one against the

[1] Morgan, John J. B.: *The Psychology of the Unadjusted School Child.* The Macmillan Company, 1924.

group, not against the authority of the teacher. Even with primary classes the teacher has to prevent the possibility of having the group in sympathy with the offender. Such group sympathy is a natural attitude if the situation is such as to make children feel that the offender is a rebel against the teacher's authority, rather than an aggressor against their group rights or the social spirit. Where this group spirit has been developed, willful violation of it must be watched as an indication of abnormality of some sort in the child. This presents a problem for investigation rather than for punishment. Spontaneous mischief will be checked and prevented by such group control. Willful, persistent infraction cannot be met by either authoritative punishment or group disapproval.

This socialization of the discipline problem should be done for two reasons. It is more effective than the maintenance of order by autocratic control, and obedience or conformity to group standards and spirit is a more natural and effective training than orderliness compelled by authority. This form of democratic control is the best field for promoting the type of self-control in regard to social effects that must be learned by the future citizen. The setting for such social training in self-control is far more effective in the schoolroom than it is in the home. The attitude of autocratic, authoritative control of children's conduct is the more natural one for parents to assume.

How to build up group spirit. There are a number of general devices which a teacher may use to build up a group spirit that will act both as an inspiration to good order and industry and as a preventive check on disorder.

The social effect of infractions should be made as plain as can be done with children so young. The unfairness to the group of some specific act cannot be reasoned out as effectively with primary children as with the more mature

pupils, but whenever any act can be shown to be anti-social rather than an opposition to the teacher's authority, the opportunity should not be overlooked. This appeal to the social sense can often be made as effectively on the constructive side as on the preventive. The teacher should be ready to lead the group in generous approval of any action that can be interpreted to have beneficial social significance. In the same way the appeal to a child's pride can be given a social background.

Another means of building up a helpful group spirit is found in putting social responsibilities on pupils and in giving opportunities for coöperation. Interest in the group and identification with a group can best be promoted by the exercise of service to the group.

This placing of responsibility is especially effective in reaching those pupils who seem to start with a troublesome spirit. The earlier evidences of antagonism to the teacher, or of anti-social fears and resentments, can be met in no more telling way than by this challenge to group service.

Perhaps the most effective way to promote group spirit is for the teacher to have a regard for the plans and purposes of the group. One of the values of the new project method, especially where pupil initiation of such projects is stressed, lies in the contribution which such activities make to the feeling that teacher interests and pupil interests are identified, or rather that natural pupil interests are given sympathetic consideration by the teacher. The plans and purposes expressed by the pupils are often allowed to be put into execution, and the teacher coöperates to bring to a successful conclusion those plans which, in her judgment, are sure to produce valuable incidental educative activities. The approval and execution of such plans, and the enlistment of group coöperation in working them out, all help to further a wholesome *esprit de corps* in the class.

Social and authoritative punishment. The punishment of disorder in the primary room should not be dealt with in the same spirit or with the same methods as are used with older children. In the first place there must be a more sympathetic and generous standard, and more laxity with reference to the matter of order, than with further advanced pupils. Social disapproval should be an adequate punishment for most infractions of order. Conference, the discussion of punishment to be meted out by the group, should not be resorted to in the primary grades as it may be with older groups.

The purpose of punishment, whether it consists of invoking group disapproval or of a more serious follow-up by the teacher's authority, should have as its motive merely future prevention, never retaliation. Cases of persistent unruliness or non-conformity should first of all be made a matter for careful physical and psychological analysis, rather than for persistent punishment with constantly increasing severity.

The primary teacher should be especially careful to distinguish between impulse and willful, persistent disorder. The motive of disorder must be considered especially with the younger children. Most disturbance in the primary room may be attributed to natural restlessness. Disorder arising from formal constraint or inactivity cannot be considered a breach of discipline, nor can any manifestation of exuberance. Most of such impulsive restlessness must be met, not with reproof and punishment, but with any feasible change of activity. This will even apply to many cases of mischief, as well as to mere infractions of the order of the room, or disturbing interruption of assigned activities.

The necessity of making a thoughtful analysis of motives illustrates how impossible it is for any one engaged in teacher training to give out a program of penalties that are

to be applied to a series of specific offenses, and it also shows how necessary it is for a teacher to meet such disturbances by quick, clear judgment, instead of trying to prevent them by a program of rules, prohibitions, and set penalties previously formulated.

Much of this type of impulsive disorder and mischief may also be anticipated and prevented. An experienced teacher will discover evidences of incipient disorder, and will redirect the activities of individuals or groups before matters come to a head.

Standards of order. The teacher with severe military standards of order, silence, and immediate mechanical response to commands is out of place in any classroom, but is especially a misfit with younger children. Freedom has characterized the child's day at home during the five or six years of the pre-school period, and impulsive motor response to any stimulus is still the child's natural reaction. Inhibitions on impulse are a product of long experience, and complete repression of all natural impulse should not be attempted in the first few years of school. Some confusion and disorder in activities and materials may reasonably be expected. Partial adjustment to the conditions necessary for group learning is an adequate primary standard.

We recognize the need for activity partly in our primary program, but even in the recitation and study activities we must still be willing to permit considerable freedom and irregularity. First steps in orderly adjustment may be made by taking note of extreme unnecessary noise, shouting, loud talking, scuffling, pulling, pushing. Some of the first steps in conventional courtesy, especially if the home training is lax, may be a part of the constructive program in manners. One of the best principles to keep in mind, in meeting either individual or general disorder, is to substitute activity, to make a change, rather than to repress or punish.

When confusion, noise, disorder, or any problem calling for discipline develops in the room, take a bird's-eye view of the situation, suspend judgment until all the facts are known, diagnose the trouble, and lastly prescribe the treatment. If it is a case of fretting or wiggling, take into consideration the health of the child, physical disorders, and mental stability. Is his clothing annoying him, is he too warm or too cold, has he been kept still too long, is he failing to find an interest or means of satisfying legitimate desires, or is his energy applied to the task diffused? Having diagnosed our case, prescribe a treatment which will alleviate the distress and which is in keeping with the error. Is it a hunger for activity on the part of the class, expressing itself in an anti-social room manner? If so, drop what you are doing and clear the atmosphere with a shower of imaginative play or a game. If the trouble is due to the fact that you are demanding a longer period of concentration than little folks can give, direct your subject into a playful activity, and later come back for a few moments of absorbing concentration. Remember that a few moments of wholehearted concentration is worth more than hours of partial attention.

Meet a situation which would otherwise end in nagging and pulling by a change of classroom atmosphere in the form of a fanciful tale, finger play, or a rhyme or game, and thus prevent a disorder climax by changing scenes.

Illustrative cases. The following are illustrations of cases of discipline handled in the manner described above.

Case I

1. Statement of case:

A little girl five years of age was found, when ready to go home, with needle and thread in her pocket. When questioned she seemed most guilty.

2. Diagnosis:
   The child was deeply interested in sewing.
   She lives in an institution.
   She does not always have desired materials to work with.
   Is afraid to ask for materials.
   Thinks she might be refused.

3. Treatment:
   a. Caused her to face her action and acknowledge.
   b. Reminded her of all her privileges in school, and made her realize that her teacher was her friend and would always try to meet her needs and desires if possible.
   c. Deprived her of needle and thread to take home that day because she had taken them without permission, but told her that any time she desired to take something home to work with she must say so, and if possible she would be given or loaned what was needed.

4. Result:
   The child seemed very much ashamed.
   The next day she brought a scrap of cloth to school. When told she might borrow a needle that day to take home if she would wait at noon, she showed keen delight and did not fail to wait.
   The following day she returned the needle, very happy because she had not lost it. (Nothing had been said regarding the time of its return.)

Case II

1. Statement of case:
   A little second-grade boy scratched his desk by making several lines in a row.

2. Diagnosis:
   The desk was marred during the arithmetic class.
   He used the scratches to aid him in answering the arithmetic problems assigned him.
   His arithmetic was too difficult for him.

3. Treatment:
   The teacher admonished him for abusing school property.
   The teacher gave him simpler work in arithmetic, and

helped him during recess periods until he caught up with the class.

The teacher gave him markers to use in place of the scratches on his desk.

4. Result:
   The child is protecting school property.
   He feels the teacher is his friend.
   He improved in his arithmetic.

3. General principles in discipline

It has already been pointed out that the problems of discipline are best approached indirectly — by anticipating and preventing disorder; by establishing a large part of the day's activities, especially in transitions, on a routine basis; by careful planning and preparation, especially in the use of study and activity materials; and by a progressive analysis and development of the teacher's professional personality. Each of these factors may be developed a little more fully, with some practical suggestions and illustrations.

Anticipation and routine. The primary teacher need feel no hesitation in developing considerable routine in her classroom management. One may have a great deal of such routine without being militaristic in spirit, but modern individualistic faddists, who are at the other extreme, may take exception to anything that will interfere with childish license, which has been sentimentally glorified under the name of freedom. To such no apology need be made for employing and promoting habits of orderliness and efficiency which will obviate delays and confusions, and make subsequent disciplining unnecessary. Routine is merely another name for habit, and habits may be good or bad, efficient or inefficient. A large part of our adult daily life has to be reduced to the plane of habit to give us time for other things.

One man may have routinized his day so as to take nine hours for sleep, one hour to dress, one hour for breakfast, two

hours for a morning paper, three hours for morning work, two hours for lunch, three hours for afternoon work, two hours for dinner, and have an hour left for evening recreation. Another may take seven hours for sleep, two hours for all his meals, a half-hour each for dressing and his daily paper, and six hours for work, and put in eight hours for worth-while reading and recreation.

One teacher may make her roll call a matter of five minutes of routine; another may take fifteen or twenty minutes for it. One may have school work so collected that it can be distributed in five minutes; another may have papers, crayons, and other materials so jumbled together at random that three or four times as much time must be used in distribution. The distribution will be done one way one day, another the next, without any thought as to how it is being done or whether it could be done more efficiently. A plan might be worked out so it would be done in the most efficient way, and then that way could be adhered to until it becomes a habit or a matter of routine. Even in the primary grade helpers and monitors can easily be trained in a few days to do things in a methodical, efficient way.

Planning and preparation. This phase of discipline connects our discussion with one of the topics that was discussed in the earlier part of the chapter, dealing with the management of the recitation and study periods and with the control of the other activities of the children, especially with the matter of program-making.

We must recognize, however, that there is a great deal of thoughtful planning and preparation that must be done within the various elements of a well-ordered program. This is more strikingly true of the teacher's preparation in more advanced teaching, but its significance for orderly progress is easily overlooked and neglected by the primary teacher. Pauses while the teacher is looking for materials,

when the group is ready for work, are as productive of restlessness and disorder in a primary room as when a more advanced teacher is at a loss for subject-matter with more advanced pupils. Getting work on the board, or finding and distributing paper or chalk, on the spur of the moment, gives opportunities for mischief and confusion that might easily be prevented by careful planning and preparation.

Disciplinary Personality. The whole matter of teaching personality, with suggestions for the progressive development along personal and professional lines, will be taken up in detail in the next chapter, but it is necessary here to show the significance of the teacher's personality in dealing with problems of discipline. It is in the relation of personality to discipline that a teacher and her supervisor are most conscious of her success or failure. It is because of what seem to be innate traits that we often hear the claim made that teachers are born, not trained. It will be shown in Chapter VII that this claim in many instances, is far from true, and that the necessary personal qualities for professional success can be developed as certainly as one can develop in technique and subject-matter preparation. So far as the problems of pupil conduct are concerned, the teacher must realize that either desirable or undesirable conditions in her pupils are a reflection and reaction on the part of children to her own characteristics and attitudes. Quiet poise, kindly sympathy, naturalness, fairness, sincerity, a pleasant voice, and cheerfulness of dress and expression will produce reactions quite the opposite from those produced by nervous strain, impatience, affectation, unfairness, a disagreeable voice, and a severe, drab costume.

The atmosphere of the room is conditioned by these spiritual and personal qualities of the teacher more than by her program or rules. If she is hesitating, faltering, vacillating, and changeable, the children will be so by reflection, con-

tagion, and imitation. It should be the teacher's rule to be and express what she wishes the pupils to be and express.

Moral education is a product of character-building from within out, not a process of veneering. The teacher who is innately courteous is that with her class, and, without rule or moralizing, gets class courtesy in return. This type of courtesy is deep-rooted, and is known by its fruit on the playground, at home, or in the schoolroom when the teacher is absent.

It may be stressed in this connection that the voice is a powerful influence for order when it is well modulated, steady, clear, and colorful, or for disorder when it is harsh, piercing, muffled, or monotonous. The teacher with a good speaking voice does not try to drown the children's voices with her teaching. She knows that good is as contagious as naughtiness, silence as contagious as noise and broadcasts germs of order. She is busily engaged in good teaching, and finds little need for disciplining and scolding.

The ideal primary teacher is a woman with pronounced mother instinct, who loves children and believes in them. She is convinced of their worth to society as children, not alone as potential adults. She has a sound, practical philosophy of life, is innately refined and cultured, has a scientific attitude of mind (suspending judgment), and possesses tact, vigor, enthusiasm, zeal, ingenuity, resource, adaptability, and optimism. She is industrious, but knows when to quit work and how to play. Her contact with many phases of life is broad and wholesome. Her sympathies are deep, not sugar-coated or false. She can smile and laugh, but knows how to guard against the proverbial primary "grin." Her attire is neat and colorful. She is a selective agent in her classroom, not a dictator. She is not afraid to show as well as tell. She is childlike without being childish, and expresses in voice, posture, walk, poise, activity, and courtesy

the qualities which she wishes to bring out in her children. Her best score card for self-rating is herself as reflected in her class of little unconscious imitators.

Training in choosing. In all our dealings with problems of discipline we must keep in mind the fact that our aim is not our own professional comfort, not even the attainment of satisfactory conditions for the academic learning of the child. We have as our objective primarily the social and moral development of the child. In thinking of the child as a member of a democratic society, we realize that, among the primary factors in the building of successful citizenship and good character, the qualities of independence and of initiative and self-control are the most important. Fundamentally the child when he leaves school is a social and moral success, not if he relies on, if he needs, authority to make his choices, but rather if he himself makes wise and good choices, if he has learned how to use freedom.

This motive in our social and moral training is reflecting itself generally in our philosophy of school discipline. We want to train pupils in wise choosing, rather than in obedience to authoritative choice. In his analysis of a disciplined character Dr. Kilpatrick would place choice-making first of three essentials, namely, "choosing ends wisely and justly, persevering in the face of distraction, and coöperating with others."

In teaching children to make and abide by wise choices we are training them in self-discipline and the best type of morals. How, it may be asked, is this great skill in choice-making to be learned? By a substitution of the word choice in an old adage, which makes it read: "Learn to choose by choosing." In the home and school of the past the parent and teacher did the choosing, and the child stood by and observed choices being made for him and became the product of the choices of others. Later when he faced the world,

with neither teacher nor parent at his elbow to do his choosing for him, he became the victim, not infrequently, of crude, unwise, and sometimes vicious choices. What the child fails to master in the technique of choice-making within the home and school he will be forced to cope with outside without the influence of a wise supervisor.

If choice-making is to permeate the curricular activities of the school, we must anticipate choices varying in grade. As with all the activities of a learner, his first attempts are far from bringing perfect results, but should we expect perfection in choice-making from the beginner, when we do not hold him to perfection of manual dexterity and other learning activities? Then let us be prepared for classroom choices which are good, bad, and indifferent, but let our standard of criticism be concerned with how much improvement we observe in his choices, rather than with why his choices are not perfect.

The laws of learning apply. Let us not lose sight of the laws of learning that operate in choice-making. The child chooses again that which satisfies him and he refrains from choosing that which annoys him. The thing of vital interest to us in this is that if the child is to improve in choice-making, his poor choices must annoy him. The teacher who permits herself to be annoyed by the poor choices of her class is benefiting neither her class nor her own state of mind. Through suggestions with regard to choices and their possible outcomes; through stage-setting, as it were, in exposing and limiting choice of materials and methods; through her ability to control the natural annoyers consequent upon a poor choice, or her authority to administer artificial annoyers in so far as they are in accord with the original choice — the teacher has it within her power to influence and stimulate improved choice-making on the part of her pupils, and thus promote the better type of social and moral self-control.

Free work and self-directed, pupil-initiated activities are all more difficult to control than the formal prescribed methods. Therefore one should always begin with the more formal technique and, as one feels master of the situation, loosen the reins a bit and introduce more and more freedom. Freedom becomes license the minute the reins of discipline leave the teacher's hands. Certain lines of control are employed by the good teacher that prevent the group from getting to a point where it cannot be called back. In this matter of freedom one must guard against "runaways." Once the children have had an experience of license and disorder, it is much harder to bring them back to a state of orderly attention.

In a primary room, where many lines of activity are being carried on at the same time, it is necessary for the teacher to employ some signal to bring her group to a point of attention. Some teachers tap a triangle for this purpose, some use a bell, some a piano, others find a clear, carrying tone of voice sufficient. It is poor discipline to gather the group by calling the children to order individually. A sudden novel change will attract their attention through sheer curiosity without the aid of further coercion. The new interest may be a song, game, finger-play, rhyme, or toy, or may lie in some sudden change in the teacher's manner or speech. This attention device must be alive, short, startling, inviting.

SELECTED REFERENCES

The two older standard books dealing with problems of classroom management and discipline are:

Bagley, W. C.: *School Discipline.*

Morehouse, F. M.: *The Discipline of the School.*

Three more recent books are:

Morgan, John J. B.: *The Psychology of the Unadjusted School Child.*

Perry, A. C.: *Discipline as a School Problem.*

Sears, J. B.: *Classroom Organization and Control,* revised edition, 1927.

CHAPTER VII

THE PRIMARY TEACHER

1. The primary teacher's personality — Developing professional personality — Our different personalities — Can personality be developed? — Mental personality most static — Revolutions in moral personality — The development of social personality — Professional personality — Developing primary teaching personality — Desirable personal qualities for the primary teacher.
2. Special preparation in knowledge and technique for primary work — The psychology of pre-school and primary children — Recent points of view — Understanding of the kindergarten — Training for special skills — Special subject-matter preparation — Mastery of special techniques — In reading — For incidental learning by activities — In lesson-planning.

1. The primary teacher's personality

EVERY teacher should, from time to time, make a conscious professional self-analysis, with a view to discovering those individual qualities that must be especially developed to insure a constantly increasing professional success.

For the primary teacher, as well as for any other, such an analysis should be made systematically along two definite general lines, that of personality, and that of technique. Every teacher is capable of development and improvement along both lines. As a teacher one must *be* certain things, and one must *do* certain things. A definite formal method may aid us in a progressive development in both personality and technique.

Developing professional personality. No one will question the possibility of developing professional technique in any line of work. All professional schools — in our profession, all normal schools — are based on the theory that it is possible to learn what to do and how to do it in the best

way, and that it is possible for almost any one to be trained in teaching technique.

Not much thought or formal planning has, however, been given as yet to the problem of developing personality. In a few lines of applied psychology, notably that of salesmanship, the question of developing personality has been given some attention. However, even there, the field has largely been left to rather unscrupulous exploiters, and most of the reputable psychologists have hesitated about entering the field of personality development because it has been the subject of considerable quackery. A rather extended experience in the supervision of practice teachers has, however, forced the conviction that certain personal qualities highly desirable for success in teaching must be thoughtfully cultivated by the individual teacher, and that they can be developed by systematic attention. Such personality traits must be clearly distinguished from elements of technique, and are as important as — if not, indeed, more important than — an acquaintance with methods and devices.

Many beginners in the teaching profession, for example, are altogether too apologetic, too meek and modest, to lead or dominate a group of children. This quality of personal leadership must be acquired and can be developed. The reasons for a lack of this important trait in so many worthy novices are not hard to find. Some of the best students in a normal school or a university school of education have been more or less disqualified for leadership by their academic experiences. The very quality of docility, of "teachableness," of intellectual dependence, which has served to make them successful as students, becomes a serious drawback when these young people are put into a situation where they must assume the leadership. This quality of leadership can as certainly be developed as the opposite trait.

Only self-help, self-analysis, and a conscious, systematic

self-development can serve to overcome such a handicap, as well as other similar shortcomings which lie in the field of personality. A supervisor can only give advice, help in the self-analysis, and try to identify and point out the qualities needed for growth and larger success; the individual teacher must then work out her own salvation. It is the purpose of this chapter to help the primary teacher to undertake this task of self-improvement on the side of personality as well as of technique.

As a point of attack on the matter of personality development, some general analyses of the matter of personality, and especially of certain qualities of primary-teaching personality, may be of some help. The problem may at least be made less hazy, less intangible.

Our different personalities. The difficulty in defining personality has, perhaps, had much to do with our failure to attack this problem in our training schools. Philosophical definitions would be of little value, but practical definition may serve our purpose. The term is derived from the Latin word *persona*, meaning a mask worn by actors. Our personality in a practical objective sense may be said to be "how we impress others," our "social mask," disregarding for the moment the subjective counterpart that exists in ourselves. Perhaps we may also clarify the idea somewhat by comparing it with the terms "character" and "reputation." We may use the term "personality" in a variety of ways — our physical, mental, social, and moral personalities may each be thought of separately. Any one of these may be so dominant as to overshadow the others, and may sum up the impression which we make on others. In a loose sense of the word, "character" is what we actually *are*, as distinguished from the impression we make on others, which is our personality.

We might raise the question at this point as to whether we

present a different personality to different people. If so, we must redefine personality as "the way we ought to impress people" if they were not short-sighted or prejudiced, or if they were careful, discriminating judges; or else we might say personality is the way we generally impress persons, or the way we impress most persons. To return to the comparison of character and personality; character is usually used in a more restricted sense than that given above, and as practically synonymous with our moral qualities. If we use "character" in that sense, "personality" is always a broader term.

"Reputation" is what people *say* we are. This may be either a true representation of our character or of our whole personality, or it may be very untrue, very exaggerated, or very distorted. Our reputation may be the product of willful misrepresentation; it may do great injustice to our real character; it may give us quite a fictitious personality, as is often the case with men prominent in public life.

It was intimated above that our character is what contributes the moral phase of our personality. In a similar way our physique makes its impression; our mental abilities make their impression; our social qualities or attitudes impress others favorably or unfavorably. Either we must think of our personality as all these impressions combined into a more or less related unity, or we may speak of having different personalities — a physical, a mental, a social, and a moral. The first is probably nearest to the common conception of the term, but the analytical approach will be more helpful for our present purpose.

Can personality be changed or developed? We should now raise the question as to whether personality can be developed. The answer will seem more obvious if we ask, Can we change or improve any one of the phases of our personality? Arguments drawn from several concrete phases of

personality impression may, perhaps, best serve to answer this question.

If we take the physical personality, it is easy to gain assent to the question. The physical side of our personality is largely involved in two elements, our bodies and our dress. Growth, health, ill health, diet, exercise, artificial "make-up" — all serve to change our personality from time to time, for better or for worse. Such physical changes are to a considerable extent under our control; they are capable of improvement and of deterioration. We see this illustrated in a striking way on the stage. The great actor in a varied repertoire assumes the personality of a Richard, a Richelieu, a Cæsar, and a King Lear. The change in personality satisfies us, although but little change has taken place save in externals. The imagination of the player and his audience enter to some extent into the alteration, but the mental, social, and moral phases of the actor's personality have not been changed. This conscious assuming of varied personalities, especially of these physical externals of expression, tone of voice, manners, and actions of different characters, constitutes the player's art. His sense of fitness in such assumptions of personality constitutes his dramatic imagination, and his native ability plus his acquired facility along this line of impersonation largely determines the degree of his success.

Varied experiences in such assumptions of personality have a strong reaction on the actor's own social personality, and this ability consciously to dramatize himself in any given social setting, even in real life, no doubt accounts very largely for the fact that actors are, as a class, usually thought of as striking or interesting personalities, and are often rated higher than they would be if the rating were based more strictly on the mental or the moral phases of personality. A similar dramatic social grace and charm of personality

may often be seen in kindergarten and primary teachers who have given themselves considerable practice in the art of dramatic story-telling in connection with their school work.

Mental personality most static. Our mental personality is probably less subject to change than any other phase of our personality. We must not confuse the mental side of personality with knowledge, ideas, or learning that we may have attained. It is rather by the quality of our minds than by the content that we impress others. Such traits as keenness, clearness, order, efficiency, quickness, alertness, or profundity in our mental reactions, and their opposites, are what impress our personality on others. All such qualities of mind are now known, as the result of intelligence-testing, to be largely innate and probably capable of little change. We are born strong or weak in such traits; training and experience have their effect on contents and attitudes and methods of mental operation, rather than on the qualities themselves.

However, efficiency was inserted with a purpose in the list of mental traits given above. That quality alone is probably the only point of attack in mental change for most of us. Efficiency brings attitudes and method into relation with our original endowments. We may consciously strive, by operating consciously with reference to time and excellence of product, to bring the inherited qualities to their highest degree of service; and in so striving we may reasonably hope for success. We may, for example, get the conception that keenness and clearness of thinking are a product of orderly analysis, and that analysis of any new problem can be pursued by a more or less mechanical method. We may, also, come to recognize the importance of clear thinking to such an extent that we determine to apply this mechanical method of analysis at once when a new problem presents

itself. The product of such a mechanical mental procedure may be more valuable, more acceptable, more impressive, than the more intuitive reaction of a naturally analytical mind not consciously pursuing an efficient method of thought. It is such systematic reflection that often enables mediocrity to excel erratic or desultory genius.

Revolutions in moral personality. The moral phase of personality is probably capable of the greatest change — a change even amounting in many cases to complete revolution. The most familiar instances of this are the cases of religious conversion or of reformation inspired by aspiration or disappointment in romantic love. Such sudden changes not only affect the more vital phases of character, but often have important reactions on the other phases of personality. Physical appearance becomes a matter of care and pride, social attitudes and relationships are seen in an entirely new perspective and become subject to conscious control, and often a new worth is attached to mental efficiency. Because moral evaluations become dominant when moral consciousness is thus awakened, the ideals in this field tend to control the other phases of personality as well.

The development of social personality. By the terms of our definition the social phase of personality might be thought of, in a certain broad sense, as synonymous with the total. But this confusion is merely due to a lack of proper terminology. By the social, or "sociable" phase of personality is meant, in a restricted sense, those attitudes or qualities which are most prominent in our relationships with individuals or groups when we are communicating with them in conversation, address, or written expression with the aim of sharing our thoughts or influencing their thoughts or actions.

It is largely a matter of how we evaluate ourselves with reference to others; it is largely a question of whether we are

putting ourselves in a position of inferiority, equality, or superiority. It involves the question of whether we are setting up standards of conformity or of individuality, whether we seek a place of leadership or of following, whether we wish, by conforming to the average type of group, to avoid being conspicuous, or whether we seek distinction by being different, original, eccentric, or even antagonistic. In authors, for example, this social personality is largely a matter of "style"; in our general contacts with single individuals or small groups it is to a great degree a matter of manners, bearing, and conversation.

Professional personality. Most of our sociable contacts can be classified. Our domestic, or home, personality is one of the important angles of our social contact. Our vocational or professional contacts are perhaps the most important for most of us. Different professions have more or less of the social element in them and have varying kinds of social groups to deal with. Illustrations in the case of the minister, the doctor, and the teacher need merely be suggested; elaboration is not necessary.

Often such distinctive professional personalities have favorable or unfavorable reactions on our broader social contacts. If a minister is as distinctively sanctimonious in his manner as he may be in his garb, we avoid him in general social relationships. One of the serious drawbacks to the teaching profession lies in the daily social contact with immature minds, which more or less incapacitates the teacher for a free-and-easy manner in adult society. This reaction on one's general social personality is perhaps most keenly felt by those who must spend their days with the younger children. The kindergarten and primary teachers are, therefore, perhaps most in need of cultivating social contacts with adults in out-of-school hours.

Developing primary-teaching personality. The purpose

of the whole preliminary discussion has been to show the relation of the teacher's professional personality to other broader personal qualities, broader phases, and to show that such personal qualities making for success in teaching can be consciously developed. The process of development is largely a matter of ideas and ideals — of self-analysis and individual desire and effort. The first step is to measure oneself in a systematic way by means of one of the general teacher-rating cards that are now quite commonly used by supervisors, giving special thought to certain definite qualities of personality that are important for success in primary teaching.

An outline for such self-rating in regard to personal traits is given below, with brief comment and suggestion. Most of the qualities will apply to any teacher, but those applying to the primary teacher are specially stressed. Some qualities important for the more advanced teacher, but of little significance for the primary teacher, have been omitted; the outline is not intended to be an exhaustive teacher-rating plan.

1. Physical traits. Thought should first be given to the two phases of physical personality, health and personal appearance. Would you rate yourself as excellent, good, fair, or poor with reference to each of these? On them depend the first impressions that we make with our personality, not only on superintendent, principal, and other teachers, but on your pupils as well, even on the children of a primary group. Do you know of any health handicap that you have? What is the cause of it? Is it due to a lack of exercise, improper clothing or ventilation, or improper diet? If you do not know, how should you find out? Do you realize that an unfavorable impression due to ill health is fundamental and serious in your professional career?

With reference to dress and other matters of personal

appearance, what determines your standards? Have you consciously thought of such matters as related to your work? Do you have the mistaken notion so characteristic of teachers, as a class, that you should dress inconspicuously in drab colors? Have you tried the effect of a bright, colorful dress on your class? Do you think a teacher should go in for extreme styles? Should a teacher be among "the first by whom the new are tried," or should she be "the last to lay the old aside"?

2. Mental traits. It is now possible for every teacher to get a thorough and reliable rating with reference to general mental ability. Most of those who are now preparing for teaching are getting a definite rating of themselves in normal school or college with the entrance intelligence examinations. Do you know whether you are in the upper, lower, or middle group of a typical class of college people so far as mental ability is concerned? Beyond this general rating, how would you rate yourself in comparison with others you know as to such qualities as the following: clearmindedness, foresight, ability to size up a mental problem quickly, keenness, alertness, judgment, discrimination, and reasoning ability?

3. Emotional traits. How would you rate yourself with reference to such qualities as poise or self-control, enthusiasm, decisiveness, initiative, optimism, self-confidence, self-assurance, persistence, determination? How far do you feel that such qualities are the reflex of physical condition? How far are they the product of mental habit that may be changed? The first two qualities, poise and enthusiasm, are especially important for the primary teacher. If you feel yourself lacking in these, can you not consciously develop them?

4. Moral traits. How is your work with little children affected by such personal qualities as fairness, justice, im-

partiality, honesty, sincerity, industry, and idealism, or by having a large social vision and purpose in your work?

5. Social traits. At the head of a list of qualities especially important for a primary teacher should be placed the social quality of sympathy, or kindly understanding of others. Can you talk the child's language, or are you using an adult vocabulary? Do you talk "down" to the children in a patronizing way, as so many adults do, or are you guilty of the still more serious mistake of evincing amused toleration of their childish ideas? In directing the children in their work and play and in their relations with one another, are you tactful? Do you treat them courteously, like human beings, or do you assume the authoritative, dictatorial manner of a militarist?

What are you doing in a systematic way to improve your understanding of child nature? Are you friendly, companionable? In your contact with children are you what in our conduct with adults we call "being a good mixer"? Have you learned the knack of what we may call "audience sense"? Can you speak to a group of children so as to capture their interest and attention right from the start? And, finally, do you have faith in the possibilities of these children, still so undeveloped? Are you conscious, amid all the drudgery of drill work, of the possibilities of your influence? Is your work illuminated by a sense of large, future social service, and with a vision of permanent influences that may be affected by some slight act of kindliness, sympathy, or enthusiasm?

2. The teacher's special preparation in knowledge and in technique

We may now turn to the second general phase of our problem of the preparation and professional development of the primary teacher. This is concerned with the special pre-

paration in subject-matter and in technique for primary work. It will not be the purpose here to speak of the general preparation that is required for any elementary teacher in the typical normal-school course, but rather to point out the particular lines of training and experience that are necessary for this distinctive phase of teaching beginners. This phase of elementary education requires more special preparation than any other phase of school work except the kindergarten. Special elective courses for primary teachers are common in normal schools, and many of the more fully developed normals have separate courses, or a combined course for the work of the kindergarten and of the primary teacher. What are the special lines of study generally required in the preparation for primary teaching? The answer to this question will largely guide us in advising special lines of reading and study for those who are already teaching and who wish to improve their special technique.

Psychology of pre-school and primary children. In addition to courses in general psychology and the more general phases of educational psychology, the primary teacher should give special attention to a considerable literature that has been developed in recent years in what is technically called genetic psychology, but is more commonly referred to in a popular way as "child study." The earlier phase of the child-study movement and the literature it produced are open to several serious criticisms. Most of the earlier studies were based on intensive observations of single children, or of a few children — usually those in the psychologists' own homes. Many unwarranted generalizations were drawn from these isolated observations. Further, most of the early child-study leaders were disciples of Dr. G. Stanley Hall, and were too enthusiastically committed to some of the fanciful theories of mental development that Hall had expounded. Prominent among these ideas were

his recapitulation theory, the transitory theory of the development of instincts, and the general idea of saltatory development. The first two of these especially affected the psychology of the pre-school and the primary child. The last was especially applied to the period of adolescence, and does not concern us here.

At present psychologists feel there is so little significance in the recapitulation theory that it has no important bearing on educational problems. The old Herbartian plan of basing an educational program on the "culture epochs" in a child's development has been abandoned to a great degree. Similarly, recent psychology has challenged the theory that instincts are transitory, and that they must be utilized and developed just at certain critical stages or they weaken and disappear as a problem or as a factor in education.

Study of the pre-school and the primary child is continuing, however, and on a much broader basis and with a more unbiassed method. There has been a larger element of interest in the physical side of the child's growth and development, but such leaders in more recent child study as Gesell and Terman have carried their studies into the field of mental as well as physical development. Without attempting anything like an exhaustive list of the newer child-study literature, a few of the best books in this field may be listed here as a reading guide for the primary teacher:

Gesell, Arnold: *The Pre-School Child.*
Kirkpatrick, E. A.: *The Fundamentals of Child Study.* (This is one of the best of the older books.)
O'Shea, M. V.: *Mental Development.*
Terman, L. M.: *The Hygiene of the School Child.*
Tanner, Amy: *The Child.*
Waddle, C. W.: *Introduction to Child Study.*
O'Shea, M. V. (editor): *The Child, His Nature and Nurture.*
Pechstein, L. A., and Jenkins, F.: *Psychology of the Kindergarten-Primary Child.*

Recent points of view. The progressive primary teacher should also know that general psychology itself has in the last few years developed several extremely important points of view, radically different from the typical psychology that most teachers have come into contact with in their normal school training. There has been, in the first place, the development of the new field and method of psychoanalysis, which puts a large emphasis on the emotional and subconscious elements of mental development. The significance of this movement for education, especially in dealing with abnormal children, has been admirably worked out in a very readable book by Dr. John J. B. Morgan, entitled *The Psychology of the Unadjusted School Child.* The second radical departure in the field of psychology has given rise to a distinctive school of psychical theory, that of the "behaviorists." This theory, with a rather complete exposition of mental growth and development, has been outlined in Dr. John Watson's *Behaviorism.*

Perhaps the most significant ideas introduced into our psychology by the behaviorists as affecting the primary child are the great importance of habit, and the permanent important effect of apparently insignificant events in the earlier life of the child. Much of our present primary pedagogy has been based on our belief in a wide range of instincts, some forty in number. It was commonly accepted that such elements as acquisitiveness, collecting, rivalry, coöperation, migration, fear, gregariousness, imitation, and so on are inborn, and are dynamic elements in every child. These were supposed to be the great factors that education must control, deflect, or utilize in training the child. If properly used they are the great allies of progress; if unwisely repressed or opposed they make the child a serious educational problem. The behaviorists have retained only a few specific fears as innate elements; all the

rest are declared to be habits of early training. The importance of the pre-school and primary periods is greatly emphasized by this theory of mental growth, and especial significance is given to the formative influence of the slightest accidental factors.

Understanding of the kindergarten. If the primary teacher has not been trained in a school where she was given an opportunity to gain a considerable knowledge and understanding of kindergarten methods and materials, she should at the earliest opportunity make good this lack in her training by a careful reading of some of the best kindergarten literature. An understanding of the kindergarten methods and materials is desirable for several reasons. If the primary teacher is in a city school system where kindergartens are maintained, she should do this reading in order to understand the child who comes to her from that type of training. The preparation that the kindergarten child has had for primary work is such that he must be treated in a far different way from the child who comes directly to the primary room upon entering school. This relation of the kindergarten to the primary work from the point of view of preparation has been developed in Chapter IV. Further, every primary teacher should know about the kindergarten materials and methods because so much of this type of work can and should be continued in the non-formal activities of the primary room. The use of the kindergarten stories, games, and activities in later school work was also explained in Chapter IV.

A few of the best books to give one this insight and knowledge may be named here:

Froebel, Fr.: *The Education of Man.*
Bryant, Sara Cone: *Stories and Story-Telling.*
Kilpatrick, J.: *Froebel's Kindergarten Principles.*
Sies, A. C.: *Spontaneous and Supervised Play in Childhood.*

Palmer, L.: *Play Life in the First Eight Years.*
Pickett, L. H., and Boren, D.: *Early Childhood Education.*
Parker, S. C., and Temple, A.: *Unified Kindergarten and First-Grade Teaching.*
Moore, A. E.: *The Primary School.*

Training for special skills. The primary teacher has also a need for training in several special skills. As a director of free play, she may gain much from the type of activity she reads about, or sees in, the kindergarten. However, there is a modification of materials and methods necessary to meet the needs of a group that is still developing rapidly, and much of the kindergarten material and method has been outgrown by such. This is still more strikingly true of the type of construction work that should be undertaken in the first grade.

The teaching of writing in the primary room, too, is quite unique, as arranged in the instruction manuals of the leading commercial systems. Primary writing is largely a matter of blackboard work, and besides, it is the first step in the process of learning this art. The primary teacher must, therefore, develop a special skill in conducting the work of the writing groups. Practically all of the work in reading, again, in the primary grade is a distinctive type of teaching; it is the one thing above all others that makes primary teaching a separate art. This phase of the first year's work will be developed in detail in Chapters IX and X, where special attention is given to training in the necessary skills and in the use of devices.

Special subject-matter preparation. The primary teacher does not have the same burden of extensive preparation in subject-matter that constitutes one of the chief phases of professional development for teachers of the more advanced grades. The actual requirements in subject-matter for successful primary work are not extensive. Because the

subject-matter demands seem less definite and less imperative from day to day, they are in consequence more easily neglected. A general cultural training will be needed to supply material for content work in the upper grades, but the primary teacher will have to make a more specific preparation on her own initiative. The figure given on page 166, shows something of the relative importance of the two kinds of preparation for teachers in the different grades.

There are two lines of subject-matter development that should be consistently pursued to make one more effective in this distinctive field. The first of these is in the line of story-telling and children's literature. The beginning primary teacher usually has a small formal equipment of stories, but this training-school supply will have to be enriched constantly. For the sake of the teacher's own interest in her work, each year's work in story-telling must not be a mechanical repetition of the last. New stories, rhymes, and poems are constantly appearing, and many of them will be found more suitable than some of the older favorites. Before the close of the first year's work the teacher will also be in a position to begin the guiding of some home reading for the more advanced pupils, and the primary teacher must make an extensive acquaintance with the simpler good literature that is constantly being published.[1]

The second phase of subject-matter development is in the field of general information, especially in the line of the social sciences and the natural sciences. These are the fields in which the primary teacher takes advantage of the opportunity to get the child interested in facts, and to develop his stock of ideas and his vocabulary. Nature-study material from any of the sciences, information about other countries and peoples, and story material from history

[1] A list of some of the best references and collections of stories to tell in the primary grade is given in the following chapter. See page 194.

will constantly find a use, some with one child, some with another. A primary teacher should never be at a loss how to deal with a curiosity situation, even with precocious children. Much of the best and most usable material of this sort has already been gleaned and made available in collections, in simple child language, but some of the primary teacher's general reading should be undertaken with the hope of finding original material of this sort for her own use.

Lesson-planning. The primary teacher has a special problem in the way of program-making and lesson-planning. If the children in a first grade are properly grouped, according to ability and experience, the making of a daily schedule is no simple matter. The groups must be alternated, and often a double series of lesson plans is necessary. The necessity for careful daily planning with each of the groups can perhaps best be illustrated in the most important formal work of the grade, that of reading. Progress in the primary room in reading is not such as can be marked off from day to day by a page marker in a textbook. Neither is it good teaching to take up at random a pack of flash cards, or to fill up the "recitation" period with a haphazard selection of words that may come to the teacher's mind. In the later chapters on reading it will be shown that our basal vocabularies have now been scientifically determined, and quite carefully graded in a progressive way. The mastery of this vocabulary must be so planned as to proceed in a systematic manner, both with reference to difficulty and with reference to the use of the words in the primer or basal reader. Before long much of this planning for primary work in reading will be done in the course-of-study manuals. Much of it is now being done in the teacher's manuals for the various series of readers, but such materials are merely helps in the teacher's lesson-planning, from day to day, and cannot be a substitute for it.

PART III

THE CURRICULUM AND METHODS OF WORK

CHAPTER VIII

PSYCHOLOGY OF CURRICULUM AND METHOD

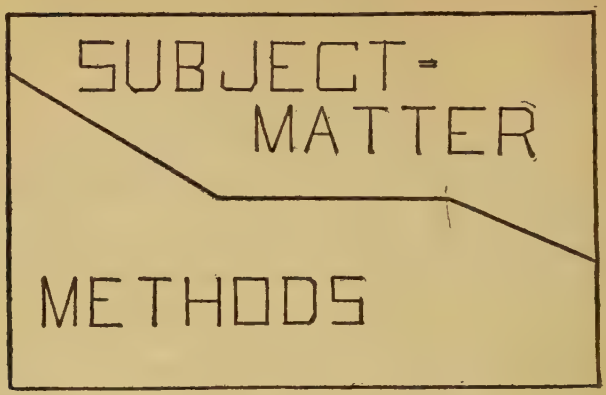
1. Psychology as a basis for method — Content vs. technique — Psychology and the learning process — Group vs. individual psychology — Public school "group" situations — Individualization.
2. Types of learning in primary work — Aims of primary learning — Prominence of skills in primary work — Memorizing in the primary grade.

   The process of perception — Complete accurate observations — Supplying abundant materials for observation — Forming new concepts — Definition of concept — Memorizing facts to build up concepts — Facts in geography — Learning facts in the natural sciences.

   Forming appreciations — Materials of appreciation — Beginning social expression — Conversation — Psychology of language mastery — Imitation and habit in expression — Forming social attitudes — Accommodation to mutual rights — Coöperation — Morals and manners.
3. General methods in primary work — General types of teaching — Skill drills — Motivating devices — Object lessons — The inductive lesson — Play projects — Activity programs — Dramatization — A dramatization illustrated — Story-telling — The art of story-telling — The appreciation lesson — Lesson-planning in primary grades.

1. Psychology as a basis for method

Content vs. technique. The process of instruction involves largely two factors, content and method. The teacher acquires these two elements of her equipment in separate courses in her training, but her success in the schoolroom depends to quite an extent on her adaptation of the one to the other; on her combination of technique and content, as well as on the relation of both these factors to the abilities and attitudes of the child. The relative importance of the factors of content and of method at different stages in the educational process may be indicated roughly by the accompanying diagram:



In grades I to IV the teacher's mastery of method must greatly exceed her knowledge of subject-matter. In the fifth grade, with the introduction of such content subjects as history and geography, the teacher's knowledge of subject-matter assumes a greater importance; but method is still of at least equal importance until the pupil reaches the high school. Here we must recognize the constantly increasing significance of subject-matter preparation, and the diminishing importance of technique.

Psychology and the learning process. In primary teaching the matter of methods is most important of all, and a knowledge of psychology is especially valuable to the teacher when she is considering the problem of methods. In educational psychology we have an application of the principles of general psychology to the problems of education. This application of psychology to school problems, that is, the field of educational psychology, has commonly been divided into three fields — the original nature or native endowment of the child, the extent of individual differences, and the learning process. The first two of these fields — the factor

of mental heredity, and the question of individual differences as related to the work of primary teaching — were discussed in Chapter V in dealing with the testing of intelligence. It remains for this chapter to point out the significance of the psychology of the learning process. This is the phase of educational psychology that especially affects the problem of methods.

In a loose way of speaking, we may think of psychology from either the point of view of the child or the point of view of methods. Strictly speaking, of course, it is proper to think of the psychology of the child only, but we may think of psychology as being intermediate between the child and the method. In fact, psychology is the indispensable intermediary between the learning mind and the teacher's method. It is indispensable because this knowledge of the child and of the ways children learn, must be obtained in order to make an intelligent and efficient selection of methods and devices.

Group psychology vs. individual psychology. In the above discussion the term "the child" has been used as if we were dealing with an abstraction or a type. The question might well be raised whether it is proper to speak of children in such a generalizing way. On the basis of the conclusions drawn in Chapter V as to the nature and extent of individual differences, it may reasonably be objected that the teacher really should make a psychological analysis of each child, and should then adapt her methods to each according to individual abilities, needs, and attitudes. Ideally the teacher should do this; practically, under the group conditions of public-school education it can be done in only a limited way, and often in only a very limited way.

Unfortunately, in practice, instruction cannot be properly individualized. A class has to be treated as a class, or as several more or less typical groups having common or

classified needs and abilities. As human beings, children have certain generic ways of learning that distinguish them from animals. As children of five or six years of age they have abilities, attitudes, and limitations that distinguish them from older or younger children, and from adults, adolescents, or infants. Conditions in public-school classes or grades make it necessary to identify such common or typical elements in the learning process at one age or another in order to make the process of mass instruction as feasible and efficient as possible. Treating children as types, in trying to determine methods and materials of instruction, is not the best we could do, but it is the best we can do under the conditions of supplying universal, free, public education.

The demand the primary teacher will make of the educational psychologist, then, is an analysis of the prominent types of learning characteristic of most of the pupils of the age with which she has to deal, and especially those elements of the learning process that are especially related to the material, and the methods that must be employed to achieve the aims that are commonly recognized for the primary work.

2. Types of learning in primary work

Aims of primary learning. In connection with the aims of primary learning we may revert to the statement made above that content is of little importance in that field. The work in reading, which is the principal work of the first grade, may be taken as an illustration of the principle involved, although the argument might just as effectively be taken from any other form of primary work. The chief aim in all primary learning is a mastery of tools that are to be used in the subsequent years of school life. As far as the primary teacher is concerned, even reading is largely to be

taught as a tool subject. It is quite immaterial whether the child gets his first reading experiences with the story of "The Little Red Hen," or "The Gingerbread Boy," or the "Come and Play" selections. The important thing is the learning of an initial vocabulary, including a number of very common words, of identifying more or less clearly the symbols involved, and of taking the first steps toward independence in vocalizing new combinations of the letters and phonograms used in print or script or in building words. The child is to learn a new technique, and the method used by the teacher will determine the success of her efforts more than the control of the "stories" that are used in the process.

Prominence of skills in primary work. Above all, the most prominent type of learning in the primary grade is the forming of certain skills. This type of learning is not confined to the more obvious muscular coördinations involved in play, in handwork, or in writing. Skill is just as prominent in such learning processes as reading and number work. In reading, successful learning involves skill in eye movements, in articulation and pronunciation, and, if we use the term in a broad sense, skill in making symbol associations.

The term "skill" is used in the sense of learning any reaction to a stimulus which must become an automatic or spontaneous response. It may be difficult to discriminate between skill and memorization, if this broad meaning is given the former term, but the distinction can be illustrated. There is a difference between a child's being able to recite a nursery rhyme from memory, and his ability to name each word in such a rhyme as it is flashed before him in any order. The child may learn to do either without necessarily being able to do the other. Association processes are involved in both, but the associations are of a very different type. Memorizing the rhyme involves the association of each word with the one immediately preceding and the one imme-

diately following, and of associating each line of the poem with the line following. In reading the verse, or in identifying any of the words in random order, the child has associated the printed symbol with its spoken name, and we may properly speak of his skill in calling off the words as they are presented. In the same way we may speak, a little later, of his skill in analyzing new words into their phonetic elements, and in sounding these elements into words which, when sounded, convey a meaning to him.

The significant thing about the learning of any such skill is that learning can be accomplished only by such frequent repetitions of the process involved that the stage of automatic, instantaneous response is reached. Until the reaction becomes automatic, we should not think of the skill as having been attained. The relation of this skill type of learning to the corresponding method will be taken up in the second part of this chapter.

Memorizing in the primary grade. On the basis of the distinction that has been made between the association processes involved in motor and mental skills on the one hand, and the associations involved in memorizing on the other, it will be proper at this point to raise the question, How much memorization should there be in the primary grade, and what should be the content of such learning activities? Memorization is not considered of as great importance in primary work now as it once was. Parents in general still have the old-fashioned conception of the first steps in formal learning, and if any start is made by the home in the formal "education" of the child it is usually in the way of teaching him to memorize the alphabet, a series of numbers, and a variety of nursery rhymes and jingles which he is called on to recite. Such "recitations" are usually the type of learning used to display the child's pre-school progress.

In the old-time primary-grade work a very similar program was prominent, and, even in learning the reading skill, it was common also in the days of the alphabet method to have the child do a considerable amount of spelling memorization in connection with the words he learned to identify. This last type of memory work is now considered quite unnecessary and out of place in teaching reading. In some primary programs, memorizing the alphabet and learning to count, that is, memorizing the cardinal numerals in order, is even omitted.

The process of perception. Another type of learning, prominent in primary-grade work, is perception. Perception may be defined as "sensation with meaning attached." The meaning is, for the young child, generally an idea of use, or a consciousness of the thing perceived as giving either pleasure or pain. Emphasis on the importance of perception at first hand, was one of the great contributions made to education by Pestalozzi, whose fundamental pedagogical principle was the use of observation as the key to method. This emphasis on observation was an effort to have children get ideas by actual, material contacts, instead of dealing with ideas through the bare verbal symbols. That verbal kind of teaching Pestalozzi condemned as an "empty chattering of mere words." This theory was largely impressed on Pestalozzi himself in his contacts with smaller children, and the importance he attached to these first-hand observations and experiences is of special significance to the child at the stage which the primary teacher has to deal with.

Real experiences with concrete objects should always precede abstract and symbolical learning at this stage. The primary teacher has as large an opportunity and responsibility for developing ideas and meanings, and for giving understandable content to a child's vocabulary, as she has

for teaching him the mastery of visual symbols in the reading lessons. The storing of ideas must continue to outrun the interpretation of the printed word-symbols that we connect with these ideas. Indirect learning, through reading, about ideas that are beyond the child's range of direct observation and experience is reserved for later stages in his school progress.

Complete accurate observations. Pestalozzi also had a related educational principle in mind when he put stress on the slogan, "a harmonious development of all the faculties." Primarily this had reference to the building up of concepts through all the senses. Because of the fact that we learn so much through the eye, especially through our reading, the use of the visual sense has been developed at the neglect of the other senses. Observation has become more or less identified with the sense of sight, yet many ideas must be learned at first through contacts with sounds, smells, tastes, and tactual or motor experiences. What an inadequate idea a child would have of any fruit if his experience were limited to the sight of it! What would the world of music mean for us if we merely saw the performers? How inadequate are our concepts of music even if we are confined to the hearing of it! How much these concepts are enlarged by attempts to execute!

In this way many of the ideas that are presented to the child during the kindergarten and primary ages must be presented in a many-sided way, so that contacts shall come through as many senses as are necessary to make the concept complete. We must not lose sight of the fact that much of the child's early learning is incidental to his random manipulations, his idle curiosity, or his free unorganized play. Such activity results in a variety of meaningful experiences that are more or less in the nature of original discoveries, and which are fully learned by the natural tendency to re-

peat the activities as conscious intents to reproduce the accidental effects.

Supplying materials for observation. The kindergarten teacher learns, as a part of her professional training, the importance of making abundant provisions for such direct-learning opportunities. Materials are provided in plenty and variety, and the teacher is constantly exercising her ingenuity to collect and introduce such objects as will have a learning value. The whole range of play material, supplies for construction work, and the collections of objects of nature are provided for such direct observational contacts. The progressive primary teacher will follow a similar program. The distinctive kindergarten materials will not be duplicated, but in the field of nature alone there is an inexhaustible supply for observational and manipulative experiences. The social field, especially of the occupational types, is another source of supply for primary "object lessons."

Forming new concepts. A type of learning closely related to the training in perception, and largely growing out of it, is the forming of concepts. The building of concepts is to be distinguished from the perceptual learning, in that it is a more advanced stage and is distinctively mental and abstract. Some of the older psychologists, in their efforts to build up a graded scheme of periodicity in the child's development, have been insistent on reserving the reasoning process altogether as a new characteristic phase of the adolescent period. In attempting this some have stretched the matter so far as to deny that a child is even capable of any conceptual processes, or any sort of abstraction, during the so-called "transition" or "formative" periods, covering roughly the ages from six to eight and from eight to twelve. The extent to which we would go in accepting or rejecting such a theory of the child's development, and the limita-

tions involved in the primary child's ability to abstract or to form concepts, would depend somewhat on one's definition of conception. The word is used rather loosely, even in psychological discussions, and in some cases is used as synonymous with the most advanced sort of adult reasoning.

Definition of concept. It is more common to define conception as a simpler process, as the combining of two or more percepts. Such percepts may come simultaneously through several senses. The combined meaning is then thought of as a concept. Or a succession of percepts, coming either through the same sense or through different senses, with the successive experiences either closely connected or considerably separated in time, may be thought of as concepts. A slightly advanced form of concept is the generalization or classification of a number of similar objects or individuals of a class, for which a class name with common characteristics is gradually abstracted. Further abstractions are involved in ideas for which there is no possible concrete object or experience.

The primary child is capable of all these types of conceptualizing. This may be realized when we examine the typical six-year-old's vocabulary, as it was dealt with in Chapter V. If we examine the thousand or more words it will be easy to identify any number that stand for concepts in any one of the three senses defined above. In trying to devise the test questions and exercises, it was found quite impossible to get any tangible concrete way of testing the child's concepts of a number of words, especially with such words as adverbs.

Memorizing facts to build up concepts. In this same type of learning we have to place some of the fact-learning activity, a beginning of which properly finds a place even in the primary grade. That place, however, is much smaller than it was before the schools and teachers learned and ap-

plied the teachings of Pestalozzi and Froebel. The contact with useful, nay, necessary, information that lies quite beyond the possibility of direct concrete perception, has to begin as early as the primary grade. Some of these facts are objects, persons, and events so remote in time or space that real learning contacts are impossible. Much of the information in history, geography, and the natural sciences that has to be opened up for the child almost as soon as he comes to school has to be dealt with on this abstract, conceptual level. Let us suppose that the child wants to know why February 22d is a school holiday. The simplest answer we can give is that we are observing the birthday of George Washington. By simple narrative we give the child some concept of Washington. That lesson is taught early enough and well enough to instill an attitude of respect, and often of admiration, for Washington. This may all be associated in the child's mind with a picture of our national hero, but it is then connected with any picture of him. In the child's experience the observation of birthdays has been connected with the birthdays of members of the family. The spirit of such occasions is now abstracted sufficiently to the observance of the birthday of one who is unknown and no longer living. The whole affair is a purely mental process, but there is developed a concept with several distinct elements deduced by a process of abstraction from several concrete experiences. The concept may be vague, but it is a tangible nucleus around which more and more distinct ideas are clustered as the child in his school work comes into contact with additional facts about the founder of our country.

Facts in geography. In the same way the primary child must begin his contact with facts in geography and natural science. Even at this age his interests and social needs carry him beyond the range of observable realities. He must learn some facts beyond first-hand perception, not

because our academic scheme of learning prescribes it, but because social contacts force it on him and us. He gets a first-hand concept of his own community, but he also comes into contact with the fact that his community is in a particular State, that there are other countries to which people travel across the seas, and that there are other cities from which letters come by rail or airplane. He learns the names of these cities where uncles, aunts, and cousins live. If he lives in the South, he builds up a concept of winter with a combination of pictures and descriptions, and approximate occasional experiences of cold weather and artificial ice. Pictures and language are intermediate symbols between realities and abstract concepts. They aid in building concepts, however inadequate and approximate such concepts may be.

In the same way, and by the aid of abstracting qualities from real natural history, he forms concepts of nature in other lands. By this means a six-year-old may acquire concepts of elephants and lions which will result in immediate recognition and distinction of such animals when he is later taken to a zoo or a circus. Around the abstract concept there has been gathered a more or less extended association of facts not learned by first-hand experience. The beginnings of descriptive and classified science cannot wait for the real percepts. As our contacts with such stored knowledge accumulate through hearing the narrated accounts of others or through our reading, we build up the related concepts that must serve us as substitutes for the realities. Such substitutes may, in many cases, give us a better basis for intelligent adjustments than first-hand contact may give. Who but an Eskimo would think of continuing to dwell in the frozen North? Would the Eskimo boy remain in Greenland if he could learn the "facts" about Florida or California, as we learn the "facts" that keep us from desiring to migrate to the far North?

The learning of such facts has been referred to as memorizing. This is memorization in only a mild degree. The term is not used in the sense of making permanent impressions for exact verbal reproduction as in a child's memorizing of a poem or a song. Much of such learning has been unwisely drilled on as if the verbal reproduction or the ability to "recite" the facts were a worth-while school exercise. The teaching of facts about, let us say, the geography or the history of our country does not have as its chief motive enabling the child to "recite" them on demand; the facts are imparted with the aim of building up a concept of one's country which shall serve as a center for relating such information to present and future conduct, and to the building of ideals, interests, and attitudes, all of which, to be intelligent, must have a rich worth-while conceptual basis.

Learning facts in natural science. Even in the field of the natural science of the child's own environment many facts have to be learned that do not permit direct perceptual experiences. Many of the objects of nature of greatest interest to the primary child can be known only very imperfectly by direct contact. The life stories of the bee, the butterfly, the ants, and the birds furnish a desirable field for development in fact learning. But such life stories cannot be learned, even in their simplest essentials, by direct observation. Even if a colony of bees in a transparent glass case is available in the schoolroom, the facts about the bee's flight from the hive have to be imparted in an abstract, verbal form. Complete observational study of the life history of any insect is impossible, but the child's curiosity must be satisfied, and it can be met by factual supplements to his observation. The opportunity for observation should be as complete and as direct as it can possibly be made, but to advocate this is not to condemn the enrichment of such experiences by a more academic method of learning, which is just as essential for the building up of complete concepts.

Forming appreciations. Quite a different type of learning is involved in the process we commonly speak of as the appreciation lesson. Primary-grade work in the field of appreciations is of such a nature as to make it easy to show that the appreciation lessons in school have usually been confined to too narrow a field. Appreciation lessons have too generally been associated with the arts — literature, art, and music. Along with these should be included as very important much of the child's contact with nature. In this field, however, too large an emphasis has been placed on the factual, conceptual types of learning. The chief distinction between the appreciative and conceptual types of learning lies in the prominence of feeling in the former type. In fact we are staging our appreciation lessons chiefly with the aim of arousing appropriate feelings. We are not aiming fundamentally at understanding or retention. Enjoyment and pleasure in the experiences are our objectives, and understanding is appealed to only in so far as it is necessary to arouse feelings of enjoyment and pleasure. Wonder, awe, admiration, and even agreeable physical sensation are adequate outcomes in the appreciation lesson. In most cases we are appealing to what seem almost instinctive reactions to æsthetic or ethical values.

The child, for example, is put to the task of learning a Mother Goose rhyme. Because of the pleasure it gives him, it is not really a task to him. Neither does the value lie in the factual content of any of the rhymes. It is just the natural pleasurable response to the rhythmical jingle. He learns his songs with largely the same reaction to the same appeal. The stories that he loves to hear over and over again, especially the folk stories and fairy tales, have no different appeal from that which stories of romance and adventure have for the adult. There is no informational or intellectual content; just the mere thrill of rapid action, of

suspense, of climax. Similarly the child nature-lover is no more of a scientist than the average adult who responds to beauty of line, to color, and to sound in the out-of-doors, with little training or information of a scientific sort about the things he sees and hears.

Materials of appreciation. In the foregoing explanation of the appreciation type of learning, the materials of appreciation in the primary grade have already been intimated — nature, art, literature, and music. The child's response by sheer feeling to a story, picture, song, or bit of nature can be stimulated readily. It is merely a question of wise choice, and of an abundant selection from the world of beautiful things that are available. The experiences should be thought of as an enrichment rather than a training of the powers; as a development of tastes for the most worthy. The selection of stories to be told, and a little later of stories to be read, is the first step in forming habits of enjoyment in literature that are to be a permanent blessing. In the same way tastes for good pictures and good music are to be developed as the first steps in an æsthetic education.

Tastes grow on what they are fed on. The marvels and mysteries, the beauty and sublimity of nature satisfy a similar innate appeal. This appeal cannot be made too early in the child's school life. Contacts with flowers and pets, with birds and trees, with hills and woods, and with all the outdoor world, and with as much of Nature as can be brought into the schoolroom, may be contacts of mere marvel and joy, with only as much information as will stimulate the pleasurable feelings that are aroused. In dealing with Nature for the days of childhood one should be more the feeling artist discovering and displaying beauty than the scientist revealing knowledge. The experienced teacher who has tried one thing and another in story, song, picture, or natural object has learned what makes an appeal and

what awakens an enthusiastic response. The novice will make use of collections of stories and of books that guide one in the wise selection of pictures for the various levels of development, and she will use some of the books and magazines that deal with nature teaching, preferably those that show how to make a wise use of the materials available in every community.

Beginning social expression. The child's entrance into school life involves two new adjustments with reference to social expression. He now joins a group of his peers, who will henceforth become both his audience and his critics. The home environment of the child has usually been one of association with elders — parents and older brothers and sisters. He is still too young to have had much contact with younger children as factors in his social adjustment. Further, this home environment has usually been an influence on the expression side that has not been conscious of its rôle as a language model, nor conscientious about the importance of setting worthy examples for the child's imitation. Baby talk has been developed and encouraged; parents have talked the child's imperfect way; they have bent their mode of speech down to his babblings. Often the whole family have imitated his habits, instead of setting a worthier model.

A group of children brought together in kindergarten or primary room now have to take on more of the conventional forms of speech. The teacher and the conflicting home habits of other children in the group compel a new conformity. The teacher supplies the standard usage for all compromises and adjustments, and her standards become the criteria of the group even before they are completely followed as correct speech habits. With this group of peers, or with individuals in it, the child must now share his experiences, his plans, and his thoughts and reactions. The problem of

conversation and communication now takes on quite a new significance and requires a new method.

Psychology of language mastery. In this conversation with his new associates the child is entering on a new stage in his language development. The mental processes involved have in the past been quite distorted by our school practices. Incorrect speech was allowed to continue, with only occasional negative criticisms, until the upper grades were reached. The child was then set to learn, largely to memorize, the definitions, rules, inflections, and classifications of technical grammar, and to apply this knowledge to the parsing of words and the analysis and diagraming of sentences. All this was done in the avowed belief that a knowledge of grammar would function as a speech control and would result in correct speech and writing. That belief has now been shattered, but not generally abandoned. It persists as many another traditional superstition has persisted, as a basis for our school practices in language training.

Opposed to this older theory of language mastery it is now being urged that correct speech, as well as incorrect speech, is almost altogether a matter of imitation and habit. Habits are learned and fixed only by constant practice and repetition. This is as true of one's speech habits as of any other skill. Speech habits are not learned nor controlled to any great extent by any knowledge of grammar which the child may acquire.

Imitation and habit in expression. This fundamental significance of imitation and habit as controlling factors in the primary child's speech and in his later written composition, and the fact that grammatical knowledge does not function as a language control may be illustrated concretely. Many a child enters school with such pre-school language habits as "Me done it." Before long he modifies

this habit for "I done it," which often persists quite through his elementary-school days. Why has he modified his speech practice to eliminate one gross error and continued to use the other? Most children achieve this correction of baby talk shortly before they enter school, or during the primary year. Why has "Me" been changed to "I"? Has the child learned the declension of the first personal pronoun, and the rule that the subject of a sentence must be in the nominative case? Does he persist into high-school years in saying, "I done it," because he has not yet learned the principal parts of the verb "do," and because he knows he should not use the past participle for the past tense?

No one would presume to explain the change in that way. The child came to school with a bad habit, using two gross grammatical violations in one sentence, because his home associates encouraged that form by repetition. The child changed "me" to "I" for the same reason — the majority of his associates spoke that way, and he formed the new habit by imitating them. He persists in the other grammatical error for the same reason — most of his associates say "I done it." He imitates them; he echoes their habit in his own.

How shall we break the habit? Only in the same way that it is made, by setting the correct model for his imitation, and by seeing that he has as much practice on the correct form in school as he gets on the incorrect form out of school — if not more. The development of this theory of language mastery and the method in habit drill, as far as it affects the work of the primary teacher, will be taken up in detail in Chapter XIII.

Forming social attitudes. Language control is but one of a number of elements involved in the primary pupil's adjustment to his new social environment. The group of children of his own age with which he is now thrown, and

the new social institution, the school, require a different reaction from that to which he has been accustomed in the home. The social horizon is suddenly expanded, and often confused, by the great number of new children with whom the child has to work and play. In every one of the children, because of the size of the group and the formal adjustment to school materials and equipment, there is a strangeness that to many is quite fearful, if we may judge by the first spontaneous reaction. When the strangeness of the first few days wears off, however, the chief problem that is left is that of getting along with the group of children of whom many are quite unknown.

Accommodation to mutual rights. Many children must learn in this new school environment, their first lessons of accommodation to others, especially the mutual recognition of social rights. Some children have learned this in their accommodation to brothers and sisters at home, but the adjustment is now to those of their own age. Here the child is neither to bully nor to be bullied; he is not to be protected nor is he a protector; he is not to be compelled by force nor can he treat his new fellows as he may perchance have constrained a younger child at home. There is adult supervision, but of quite a different type from that exercised by his parents. Most important of all, there is a complete surrender of freedom; life here is orderly, arranged according to a program. With this background the child soon learns the lesson of equal or of mutual rights. Each must consider the rights of every other one as equal to his own, and the rights of the group collectively as well.

Coöperation. Out of this environment there comes an early recognition that certain agreeable results can best be attained by coöperation. The school program includes a variety of new games which require group response, with individual differentiation of activity. Each must play his

part to make the group undertaking a success. In class work the attention of all is as essential as the response of the particular child who is called on. Socialization is attained by the sharing of responsibilities — by contributing as well as by receiving. This necessity for coöperation almost rises to the point of group consciousness, or the development in a feeble, childish way of an *esprit de corps*. If this spirit is not strongly developed with reference to the new group as a whole, it is often noticeably apparent within smaller sections of the class, especially if there is any division made by the teacher for the purpose of motivating some of the class work by competition or rivalry.

Morals and Manners. The development of social courtesies and conventions also makes a long forward step in this new group environment. In the home, conduct was controlled by a more or less arbitrary authority exercised by the parents. The great development in the child's social expansion now comes in the setting up of an entirely new standard of reference for conduct. Group opinion and group welfare now become considerations in such matters, unless the teacher is of the military or parental type and makes the children feel that all wrongs and discourtesies are violations of her authority and offenses against "her majesty." The use of social judgment and of group disapproval of wrong conduct as the violation of group rights, is a more sensible step in the direction of instilling this social principle, which must in the end be the most important moral control.

3. General methods in primary work

General types of teaching. On the basis of the foregoing analysis of the types of learning most prominently found in the activities of the first-grade child, it may be worth while to analyze the related general types of method for each of the learning types. This will involve a brief explanation of

the following general methods which are to be thought of as having a prominent place in primary teaching:

(1) Skill drills
(2) Object lessons
(3) The inductive lesson
(4) Play projects
(5) Story-telling
(6) The appreciation lesson

Skill drills. In all of the primary activities in which we are aiming at skill, or automatic response, the teacher must plan her method to secure adequate and attentive repetition of the act or the association that is to be automatized. The various types of learning to be classified under this group were outlined in the first part of this chapter. We are now to consider the matter briefly from the point of view of the teacher instead of that of the learner. Some years ago it was quite popular for writers on education to denounce formal drill work in the schoolroom. This was a natural extreme reaction against an earlier mechanical overemphasis on drill work. This movement was largely aimed at the unnecessary drill work given to factual information in such content subjects as geography and history. The word "drill" was given a further undesirable connotation by associating it with a rigid militaristic discipline. The plea of the reformers was for a more sensible appeal to interest, which was, indeed, a wise plea to make for such subjects as geography and history.

The denunciation of drill, however, was too wholesale. The reformers ignored the fundamental psychology of learning in the field of skill and habit when they objected to any sort of drill work. In the learning of any skill or habit, frequent and regular repetitions are absolutely necessary. Habit-and-skill learning can be achieved in no other way. Neither need it be assumed that such repetitions are nat-

urally distasteful to children. In learning any skill the consciousness of progress, the development of ease and proficiency, the gradual improvement of the product, and the increase in speed all lend a fascination to much of the drill any one must go through. In some activities the practice may naturally be less attractive than in others. Then the teacher's method must include a sensible motivation.

Motivating devices. Primary teaching has seen some of its most important developments, in recent years, in the invention of games and devices that have proved effective in motivating some of the necessary but less attractive drill work. Examples of such motivation material are given for the work in reading and number work in Chapters X and XI of this book. The resourceful primary teacher, who realizes from experience how much of her important work has to do with skill practices, is constantly collecting material of this sort to lend intrinsic as well as extrinsic interest motives to the learning of all skills. The method in skill work is easily described in a single word — repetition. The difference between the artist teacher and the artisan lies in the use of methods for making the practice repetitions attractive to the child.

Object lessons. A second type of method, prominent in primary work, is the object lesson. The origin of this method and of the observation type of learning in the revolutionizing doctrines and practices of Pestalozzi was sketched, in section 1 of this chapter, in discussing the perception type of learning. When we consider this phase of the child's learning experience from the point of view of the teacher's method, we can distinguish two distinct phases in her conduct of such learning. There is involved in the first place, the planning and provision of the material, and, secondly, the controlling of the class or the individual pupils in such a way that they will be led to observe just what was intended.

The sources of materials for suitable primary-grade object lessons have already been named. The cataloging of lists in any one of these fields would be superfluous. Selection of material is determined quite largely by local environment, by seasonal changes, and by the trend of current events. The supply is often so large and so obvious as to be overlooked, especially by the inexperienced teacher. The common things in nature, in local industry, and in the immediate environment of the school itself are rich mines for the teacher who understands the primary child's readiness to learn about his own surroundings. As one matures in knowledge he ceases to marvel that such great naturalists as Fabre, Burroughs, and Thoreau could find such a wealth of wonderful interest in a few square feet of a city lot, or at most in a few acres or square miles of farm and woodland. The marvels of everyday life are as accessible to every one of us as they were to these famous naturalists. In the primary grades a teacher is not usually hampered by a set program for this part of the work. One's own hobby is as acceptable as any other line that might be mapped out, and the most effective work will usually be done with the things one knows and loves the best. Pupil interests and pupil collections may be utilized, if one wishes to individualize the experiences and develop the spirit of coöperation.

The conduct of the object lesson in the primary grades is best described by the terms informal and incidental. This does not mean, necessarily, fragmentary and accidental or haphazard work on the teacher's part. The teacher's selection of material must be purposeful; the elements for observation must be deliberately determined. Even when pupils bring in the objects to be discussed, the teacher must give some thought to the matter before it is developed for the group, unless the object involves a repetition of a previous or familiar experience on the teacher's part. Further, such

object lessons are not to be exhaustive. A few salient facts of interest, and a few characteristics to be specially noted usually comprise a sufficient experience for primary children.

The inductive lesson. Because of the prominence of the Herbartian inductive development lesson in the normal schools of this country during the last thirty years, and especially because of the survival of the formal method of lesson plans with the typical "five steps," it may not be out of place to show the significance of such a common method for the primary teacher. It must be said at the outset, however, that this inductive development method has become so highly formalized that its use is often a serious handicap to good teaching, rather than a help. This is especially true for the primary teacher. There is only a single type of primary learning in which the inductive method finds a natural place, and in all other elements of primary learning this method is decidedly out of place.

The one type of primary learning to which the inductive development lesson is suited is such work as is intended to build up concepts. The forming of new concepts is the only learning activity in which generalization or induction is called for. But even this type of learning is quite incidental to some of the more general learning activities. The chief use of the inductive method in the primary grade is to be found in connection with the object-lesson work, and the building-up of concepts from simultaneous percepts as gathered by the use of the several senses, or from successive percepts, or from a comparison of several varying individual objects of the same species or the same class. Even most of this sort of concept-building is too obvious to require a formal inductive plan, with the five steps of preparation, presentation, comparison, generalization, and application, which find such a valuable place in the learning of abstract

rules and definitions in the work in arithmetic, language, and geography of the more advanced grades. In primary concept teaching it is sufficient for the teacher to keep in mind the necessity of having an adequate number of objects of a certain class, with sufficient variation in the individual objects, so that the child's new concepts will be broad enough.

Similarly some application of the inductive method may be helpful in the teaching of some of the "families" in the system of phonics that is being used. Also there is an opportunity for the use of this method in some of the instruction with reference to the meaning of number and to the simpler processes in number combinations dealt with in the first grade. In the field of arithmetic the inductive method soon finds an important place in the grades above the first in the teaching of the fundamental processes and of some of the arithmetical rules that have to be applied in this type of work.

Play projects. The use of the project method in primary work is perhaps the most important development in recent years in primary teaching technique. Most of the primary-methods literature now being published falls in this field. The term project is used in a loose way in present-day educational literature, and several of the distinctive meanings that are given it are of special interest and importance to the primary teacher.

Those who insist that the largest values of the project movement can best be realized in school work by using the term in a very restricted sense, define the project as "learning by real-life activity" — learning by doing as adults do the thing in practical every-day life.[1]

Others think of the project as a mere substitute for learn-

[1] For more detailed discussion of this restricted meaning of the project method see Stormzand, M. J.: *Progressive Methods of Teaching*, chap. v.

ing by any type of "activity" on the part of the child, whether it be work or play. These advocates of the project idea are urging the activity method in much the same sense that Pestalozzi evolved his observation and discussion technique — largely as a protest against too great a use of mere verbalism. On the other hand, they are pleading for a larger measure of individualization in learning, and are protesting against the mass treatment that has been overdone in our public-school work. They point out, with much justice, that this standardized treatment is especially undesirable in primary work. For this reason they often give a large place to the importance of having children initiate their own activities, so as to give them a more vital purpose in learning. The teacher's part in such a self-initiated activity program is to expand and direct the child's purposes, so that the activity will lead into educative experiences.[1]

The list of references given here indicates two further facts that should be noted in connection with this group of project exponents. In the first place, the term "activity" is beginning to be used more generally by this group as a substitute for the term "project." Further, for the primary grades especially, this group is advocating considerable changes in curriculum content, as well as in method.

Activity programs. Out of this latter phase of their educational philosophy there is also developing a use of the term "project" or "activity" for an extended unit of work which shall involve a correlation of learning materials, re-

[1] Some excellent primary literature has been developed out of this purposeful-activity ideal, notably the following:

Hill, P. S.: *A Conduct Curriculum.*

Krackowizer, A.: *Projects in Primary Grades.*

Moore, A. E.: *The Primary School.*

Salisbury, E. I.: *An Activity Curriculum for the Kindergarten and Primary Grades.*

Wells, M. E.: *A Project Curriculum.*

gardless of the old divisions into formal school subjects. The learning of such formally organized subject-matter as reading and number, as well as the work in art, construction, and other subjects, is all made incidental to the child's purposeful activity or project. This readjustment of both materials and method is often carried to such an extreme that, from the point of view of the primary child, two difficulties have resulted. One of these is the danger of an insufficient systematic progress in the child's work in reading. It has been shown, by a carefully controlled experiment, that a class of children taught reading in this incidental way was in its mastery of reading quite inferior to a class in which the reading work was conducted in the more formal subject way.[1] Another difficulty of this activity-reorganization in the primary grades lies in fitting the pupils to the systematic curriculum of subject-matter in the upper grades, which has to be followed, sooner or later, under the conditions of grading that are found necessary to conduct a school system as public-school organization demands.

In spite of some of these practical drawbacks the primary teacher can adapt many helpful suggestions from those who outline activity or project programs. The primary project programs have a wealth of suggestions for vitalizing and motivating the work of the grade and for the infusion of a larger degree of interest, as well as for securing a desirable unification of materials in some of the correlation activities. The motivation of learning through plays and games is also developed most cleverly in some of the project programs. On the whole, the progressive primary teacher may safely adopt much of this newer material if it is subordinated to the chief work of the grade — the formal teaching of reading.

Dramatization. Related to the idea of motivating some

[1] Gates, Arthur I.: "A Modern Systematic versus an Opportunistic Method of Teaching"; in *Teachers College Record*, April, 1926, pp. 679–700.

of the more formal learning by use of play projects is the dramatization of such learning units as lend themselves to impersonation and activity. Dramatization may be thought of as aiming at different purposes, clarifying ideas, making remote or abstract thoughts more real, or lending a play interest and motivation. The interpretation of reading lessons, or of stories told the children, serves to make the narratives more real. Aside from the vivid visualization of some of the more obscure ideas, dramatization perhaps serves its greatest purpose in the opportunities that it offers for social training. In most dramatization projects the division of parts and the effort to make the production effective serve to develop the spirit of coöperation in the group enterprise. This is especially true of the more ambitious undertakings that involve a considerable period of preparation for an audience situation. Again, in the more spontaneous exercises of this sort, the work in dramatization has an exceptional value for motivating social expression in the adaptations or inventions of dialogue that are involved.

Dramatization has been much abused in public-school practice through our deliberate refusal to study the child. Action is the child's first means of expression, and therefore dramatization should be the primary school's most important method of child education. The child must be able to comprehend and live the incidents, stories, or experiences he dramatizes. One of our first great errors has been in expecting and encouraging him to dramatize what is still quite new to him. On the contrary, he is inclined to dramatize what is oldest and most familiar in his experience. At first he portrays only the big climaxes and important characters; later, as the little drama takes on a pattern through much repetition, subordinate characters, details, descriptions, and dialogues may find entrance.

A dramatization illustrated. When the child says,

"Come, let's play Black Sambo," the teacher's part as selective agent, not dictator, is to think clearly herself what the underlying moods and big climaxes are. Then only will she be thinking with the children about their play. As selective agent she must be prepared to control the gathering of all the children into the play, the handling of the room situation, and the concluding transition which may bridge over, perhaps, from the dramatization into a quite formal reading lesson.

The following illustrates how one teacher handled the request, "Let's play Sambo":

The leaders immediately appointed themselves Sambo, Mumbo, Jumbo, and the four tigers, and were ready to play. The teacher, however, stepped in at this point with a suggestion as to how all the class might be brought into the play. Her suggestion regarding organization the children gratefully accepted. The four self-appointed tigers became the tigers' heads. Four other children standing close up to the heads of the tigers, and holding them around the waist, became necks. To the necks were added front feet, then bodies, then back feet, and lastly tails. So, instead of four children playing the part of the four tigers, six children composed each of the big, wild, wiggly beasts; thus twenty-four were brought into the play as tigers. The teacher's other suggestion was to use the remaining children for trees in the jungle.

The play developed very much as the story runs, making use of imaginary costuming and properties. There was some spontaneous dialogue between Sambo, Mumbo, Jumbo, and the heads of the tigers. Acting out the story, the tigers formed a ring around the trees of the jungle and ran around trying to eat one another up. Sambo had long since gone home, wearing his fine clothes and a smile. Then the tigers ran faster and faster around the jungle trees and melted away into butter, falling to the floor in a heap. Independently of the story, the trees, also, fell in the grand climax. Next Jumbo came along with a brass pot in his arms. Here again the teacher suggested that the waste-basket might be used, and as Jumbo gathered the butter into his pot and touched the head of each child lying on the floor, the teacher, conscious of the transition following the close of the dramatization, suggested that the chil-

dren take their seats at the tables when Jumbo touched them. Soon all were in their seats except Mumbo, Jumbo, and Sambo, who were writing on the blackboard the number of pancakes they had eaten. The play was over, there was no anticlimax or license, and all were ready to go on with whatever might follow on the program.

Story-telling. The story-telling activity of the primary teacher may be thought of from the point of view either of content, or of method. The former of these problems is outside of the proper field of this book. For the inexperienced teacher, however, reference may be made to some of the best collections or lists of stories suitable for primary children.[1] From the point of view of story-telling as a method several important elements have to be considered.

Unless the primary teacher has had her training in the newer type of normal school, where a great deal of the best technique of the kindergarten has been included in the pri-

[1] Bannerman, Helen: *The Story of Little Black Sambo.*
Bryant, Sara C.: *Stories to Tell to Children.*
Bryant, Sara C.: *How to Tell Stories to Children.*
Bryant, Sara C.: *New Stories to Tell to Children.*
Dasent, Sir George W.: *Popular Tales from the Norse.*
Fyleman, Rose: *Fairies and Chimneys.*
Harrison, Elizabeth: *In Story Land.*
Jacobs, Joseph: *English Fairy Tales.*
Lindsay, Maud: *More Mother Stories.*
Meyer, Zoe: *The Little Green Door.*
Miller, Olive Beaupré: *My Bookhouse.*
Potter, Beatrix: *The Tale of Peter Rabbit.*
Rossetti, Christina: *Sing Song.*
Scudder, Horace, E.: *Fables and Folk Stories.*
Stevenson, Robert Louis: *A Child's Garden of Verses.*
Thorne-Thomsen, Gudrun: *East o' the Sun and West o' the Moon.*
Thorne-Thomsen, Gudrun: *The Birch and the Star.*
Terman, L. M., and Lima, Margaret: *Children's Reading.*
Uhl, Willis L.: *The Materials of Reading.*
Volland Publishing Company: *Mother Goose.*
Wiggin, K. D., and Smith, N. A.: *Posy Ring.*
Story List of the International Kindergarten Union, 1918–20.

mary teacher's preparation, the chances are that she has not learned the art of telling stories to younger children. For such, a few of the fundamental principles may be stated, namely: (1)The story must be practically memorized: (2) It must be told in language suitable for the primary child's understanding, and (3) it must be told with considerable dramatic effect. Inexperienced teachers often fail on the first two of these requirements, because the story, to their adult minds, presents no difficulties or complexities when it is first read. The untrained adult in attempting to retell such a story is apt to dull its charm by repeating merely the substance of the narrative, and often in her own adult vocabulary, without being conscious of the change that is brought about.

The professional story-tellers and story-writers for children have given us this material in form and language wisely selected. Often what seem to be inane repetitions in some of the standard children's stories add one of the elements of greatest appeal to the child. Moreover, to be effective in story-telling to small children, one must seem to see and feel vividly the elements of description, and actually must suggest by gesture, facial expression, and action, as well as by suitable manipulation of tones, the thrill of the situation. This dramatic acting is more commonly underdone than overdone, as far as the juvenile audience is concerned.

The beginning primary teacher, or one in preparation for such work, must set about systematically to memorize and dramatize such story material. The process is necessarily slow, but the rewards in the attitude of the children toward a teacher who can tell a story well fully repay the effort involved. The use of the story-telling method need not be confined to the recitation of story material only. Much of the factual information that is given children in the fields of history, geography, and science can be worked up in

similar narrative and dramatic form, so as to make the impressions most effective. If one must explain Washington's birthday to primary children, the factual content may be clothed in a story as fascinating as any fairy tale.

The art of story-telling. As is well known, the art of story-telling was handed down to us from simple folk, who passed it on from generation to generation by word of mouth, and it is the responsibility of those who wish to save pure story-telling from its enemies to see that it remains simple and sincere. To this end the story-teller will render herself a perfect instrument of which her audience will be totally unconscious. She will develop a low, musical voice, will use just enough legitimate gesture to enhance the thought, and will indulge in no sentimentality or affectation. It has been wisely said that "affectation is the expression of an emotion not felt"; it is dishonesty, and has no place in a program of primary education.

There should be proper literary balance to a child's curriculum in story — that is, some realistic and some fanciful material. Proper material would include the Bible, fairy lore, realistic tales, some poetry (not all poetry written about children is for them), and plenty of Mother Goose.

The appreciation lesson. The appreciation lesson is more a matter of selection of materials than a question of method. The less method we use, the less didactic we are in our approach to the elements of feeling, the more successful we are likely to be. Choose wisely the song or story, the poem or picture, the object of nature, and then trust the excellence of the object and the spontaneous feelings of the child to produce the proper impression and reaction. Select the things that thrill or stir your own feelings, or that you know by experience have aroused the pleasure of children of that age, and then let matters take care of themselves. Remember that with the most highly developed adults, with

critics and connoisseurs, appreciation of literature is often a matter of individual taste, and with this in mind, see that the children have the same opportunity for exercising individual preference. Setting a sincere example on good taste and enthusiasms, inviting, without urging, conformity, and permitting the free expression of feeling with reference to objects of beauty, are the true essentials for the ideal primary appreciation lesson.

Lesson-planning in primary grades. The various types of learning and methods of teaching, when considered in connection with the particular course of study that may be prescribed for any school, and in connection with the individual abilities of the children in the group, give rise to the problem of planning one's work of instruction. For the primary teacher three types of planning are important:

(1) The semester plans
(2) The daily program
(3) The lesson plan for a particular day's work in a particular subject, especially in reading

The matter of work plans for the primary teacher can best be approached from the point of view of reading. Teaching the child to read is the one important business of the primary grade; everything else must be subordinated to this central objective. With reference to the work in reading the primary teacher has to consider all three of the phases of planning that have been outlined above. In reading, the teacher's semester plans are largely determined by the basal primer and the method selected, whether this selection is made by the State, county, or city school authorities, or by the teacher herself. All of the systems of reading now on the market have Teachers' Manuals, which outline in the most minute detail all the successive steps in the teaching of reading — the work in word recognition, the vocabulary development, the introduction and development of the

phonic system, and the oral exercises with the primer and the first reader. The instruction materials and methods are given for each day and week.

In planning the daily program with reference to reading, the demands of this subject are to be given primary consideration. In making out the daily program, as much time as may be necessary for the adequate instruction of all pupils in reading must be allotted first. The division of a large group into sections, with readjustments according to rate of progress, and with provision for suitable seat work for those not working with the teacher, must be mapped out. A careful study of the daily lesson plans in the manual used will be necessary until the teacher has quite mastered the particular method. Occasionally such study will result in modifications of the printed plans, especially as a teacher gathers experience with several of the standard methods and becomes more eclectic in her work.

After adequate provision has been made for the work in reading, the teacher will further develop her semester plans and her daily program to make provision for the systematic introduction of the materials prescribed in number work, writing, music, free play, construction, story-telling, and other activities. Well-defined, important topics or units of work in these lines will be distributed to definite weeks in the semester, and often to particular periods in the daily program. Other elements — training in civics, morals and manners, hygiene, language drills — will be left for incidental development in connection with the more formal work and play periods. In connection with some of these, more definite exercises will be planned occasionally, and in such particular undertakings some formal lesson-planning may be advisable. On the whole, the primary teacher can be much freer and more spontaneous in her planning than the teacher of specific subjects in the more advanced grades.

CHAPTER IX

THE PSYCHOLOGY AND METHOD OF PRIMARY READING

1. The place of first-grade reading in the general reading program — The most important first-grade subject — The preparatory period in reading — The distinctive work in reading in the first grade — Subsequent periods in teaching reading — Results of scientific research in reading.
2. Practical suggestions for teaching primary reading — Selection of reading material — The scientific reading vocabulary — Studies in children's vocabularies — Children's interests in reading — Content of the newer readers — Supplementary preparation for reading — Reading to the children — Incidental vocabulary work — Teaching the first words — The use of devices — The first work in phonics — Phonic systems a means to an end — The most important phonograms — When to begin phonics — Practical reading projects in the first grade — Grouping the words in spans — The place of silent reading in the first grade — Testing the child's progress in reading — The use of devices in teaching primary reading.

1. The place of first-grade reading in the general reading program

Reading the most important first-grade subject. The most important work of the primary teacher is the work in beginning reading. The curriculum of the first grade has undergone some modifications in recent years, but the importance of the work in reading has not been diminished. Number work is now considered of less significance than it was a decade or two ago, and in most progressive schools it has been made an incidental rather than a formal part of the first-grade course. Various types of handwork, certain phases of physical training, and a variety of activities having general educative or motivating values, are to-day being given considerable attention, but reading is still the paramount subject for the first year of school. In the case of

the more backward children who enter, it is being recognized that these pupils are not yet ready for this chief learning activity of the first grade, and a larger program of preparatory activities is being provided for them.

One of the contributions to the more recent literature dealing with the teaching of reading in the elementary schools has been the placing of the primary teacher's work in reading in a general course of study for that subject. The best educational thought has given us two helpful ideas in the grading of the work in reading that make the distinctive work of the first-grade teacher much more definite, because of the limitations set on her work. In a general way we may summarize at the outset these two important considerations:

(1) The distinctive work of the first-grade teacher in reading is not the first stage in the child's development in this subject.
(2) The first-grade teacher is not expected to complete the child's training in his learning to read.

The preparatory period in reading. Most children are ready to learn to read when they enter school at the age of six. They have gone through a preparatory period which involves experiences at home and in the kindergarten, as a result of which the average child has developed a real desire to read, and has acquired also a stock of words and ideas which serve as a basis for the actual first steps in reading. The ideas and words have become associated in such a way in the child's mind that he can get ideas when he hears the words spoken and can express ideas by using the word symbols for them. The prepared children have this desire to read, and a considerable speaking vocabulary as well.

The distinctive work of the first grade in reading. The unprepared children, who constitute a considerable minority of every first-grade class, are one of the distinctive problems for the first-grade teacher, though not her chief problem.

All children may be considered more or less ready for school in the matters of interest in reading and of having a usable understanding and speech vocabulary, but all of them will need further activity experiences, as a parallel with the actual work in reading, to expand their vocabularies.

The most important work of the first-grade teacher is getting the children to associate with the oral vocabulary the corresponding written and printed symbols. Indirectly, through the medium of the words which the child understands on hearing them, and can use to express ideas, the teacher must now build up a series of associations between the ideas that these words represent and the written and printed words that stand for them. This first step is usually carried on as a simple series of paired associations of the visual with the auditory symbols until the child has a ready control of from fifty to one hundred common words. These may then be combined into simple sentences, so as to give a complete thought through the eye.

The next stage of the first-grade teacher's work consists in helping the child to make an analysis of written or printed words into letter, syllable, or phonogram sounds, which make it possible for the child to get the idea from visual symbols by translating them to himself into auditory word symbols. These will become intelligible to him only to the extent that there is a sound-symbol-idea association already formed. The teacher's function is to select for this work only those words which are sure to strike such a familiar association, or to help the child by object lessons, activities, or explanations to make the necessary preliminary link between the spoken word and the idea. The process then becomes cumulative. The child gets new ideas from new combinations of familiar word-idea associations, and by guessing the idea represented by an occasional "new" word for which he had not previously made the sound-symbol-idea

connection. Before the children leave the first grade, they are beginning, in various degrees, to be able to make the associations between the visual word symbols and the ideas without finding the intermediate step of the sound symbol necessary. To the extent that a child has learned to do this, we may say that he has "learned to read"; that is, to get thought from the printed page without needing to hear the sounds involved.

Naturally the teacher's work up to this point has largely necessitated oral work with the child. This work is necessary in order to see that each visual symbol is connected with its proper sound, and that the associated idea is correct. Incidental to this oral "reading" the teacher has a considerable duty to see that defects in pronunciation and enunciation are corrected. Sometimes this involves practice for the correction of general bad habits, such as lisping, baby-talk, or even more serious speech defects. More commonly it is merely a question of correcting partial defects due to substitutions, omissions, or careless visualization.

Subsequent periods in teaching reading. From this point on, progress is largely a matter of experience in the reading activity, or improving facility in the habits involved, of attaining independence in the process, and of self-motivation in the selection of materials.

The period immediately following the first-grade teacher's work may be developed a little more fully in order to see just where the primary work passes over into that of the succeeding grades. In order to do this, the reading process as a physical and psychological process will have to be analyzed briefly in terms of recent scientific research.

Results of scientific research in reading. Reading consists of alternate movements and fixations of the eye along a line of printed or written words. Actual sense impressions on the eye are made at the fixation points. Facility in get-

ting visual impressions of the words depends upon the rapidity of the eye movements between fixation points, upon the length of fixations, and upon the distance between the fixation points or the span of vision at a fixation. All of these physical elements involved in reading have become matters of accurate scientific measurement, largely by means of eye photometry and the use of the standardized tests. Considerable research has been made by these means into reading habits, and a number of discoveries of the greatest significance for the teaching of reading have resulted. Some of the most important of these may be briefly summarized, as follows:

1. Recognition of words in reading takes place at the point of eye fixations, not during the eye movement.
2. There is a large variation in the eye span at fixation-points, that is, in the number of words or letters recognized.
3. A fast reader of mature age makes about four eye stops to the average book line.
4. A slow reader will make three or four times as many.
5. The eye movements of the better readers from point to point and from line to line are more rhythmical than those of others.
6. There are more pauses to the line, and the pauses are longer, in oral reading than in silent reading.
7. Poor readers often make regressive eye movements.
8. In oral reading, consideration has to be given to the eye-voice span. This is the distance, at any instant, between the point of eye fixation and the point of oral articulation.
9. In the first grade, after a child has learned to read, he can articulate five or six times as fast as he can recognize the words.
10. In the upper grades the average child can recognize words almost twice as fast as he can articulate them orally.
11. The rate of articulation and the rate of word recognition are about equal with the average fourth-grade pupil.
12. As a consequence of the last three statements, it is evident that considerable work in oral reading beyond the fourth or fifth grade may interfere with the development of proper

silent-reading habits, since the factor of speed becomes such an important element in silent reading.

13. There is a high degree of correlation between the rate of speed in reading and the amount comprehended. This, and the oral-reading problem are, however, more distinctly problems for the teacher of reading in the upper grades.

2. Pratical suggestions for the teaching of primary reading

Selection of reading material. For the first-grade work in reading there are two distinct phases to what may be called the curriculum problem:

(1) The selection of the words that are to be taught as the fundamental list at the beginning of the work.
(2) The selection of the primer and readers that are to be used as a basis for the reading work, after the initial sight vocabulary has been learned.

The first of these problems is distinctively the work of the primary teacher herself. This problem will be developed fully under two topics to be taken up directly, namely:

(1) The scientific reading vocabulary.
(2) Teaching the first words.

The selection of the primer and first reader is usually not made by the teacher but by some administrative officer — the city superintendent or primary supervisor, the school board, the county superintendent, or, in a number of States, by the State Board of Education or State Superintendent for all the schools in the State. Yet the primary teacher can and should have a part in this textbook selection. Leaders in the primary field are usually consulted by administrative officers when the selection is being made. Such teachers should be familiar with the fact that the selection of a primer and first reader can now be made on a fairly objective, scientific basis, both from the point of view of such externals as the appearance, material, type, and illustra-

tions, and also from the point of view of content and vocabulary.

An exceptionally helpful criterion for judging a primer on the former basis was worked out a few years ago by Miss Bamberger,[1] at Johns Hopkins University. This study gives us standards by which such elements as size, cover, title, illustrations, and appearance of the page can be scored.

The scientific reading vocabulary. In a similar way, the value of a primary textbook can be accurately weighed by comparing its vocabulary with a number of comprehensive word studies that have been made, and that are now being used in a variety of ways in solving a number of related educational problems.

Such word studies were first undertaken about 1911, in an effort to determine a scientific list for the elementary work in spelling. Exhaustive counts of words were made by Eldridge, Ayres,[2] Jones, Cook and O'Shea,[3] Starch,[4] Anderson,[5] and Horn,[6] of the vocabulary of newspapers, business correspondence, children's compositions, family correspondence, and similar phases of common usage. From such studies various lists of the most common words, from one thousand to about four thousand in number, were compiled.

[1] Bamberger, Florence E.: *The Effect of The Physical Make-up of a Book upon Children's Selections.* Johns Hopkins University Studies in Education, no. 4, Johns Hopkins University, Baltimore, 1922.

[2] Ayres, Leonard P.: *A Measuring Scale for Ability in Spelling.* The Russell Sage Foundation.

[3] Cook, W. A., and O'Shea, M. V.: *The Child and His Spelling.*

[4] Starch, D., and Mirick, G. A.: *The Test and Study Speller,* First Book, pp. iii to viii.

[5] Anderson, W. N.: *Determination of a Spelling Vocabulary Based upon Written Correspondence.* University of Iowa Studies in Education, vol. II, no. 1.

[6] A synopsis of all these studies is given in the Starch and Mirick *Test and Study Speller;* see footnote 4, above.

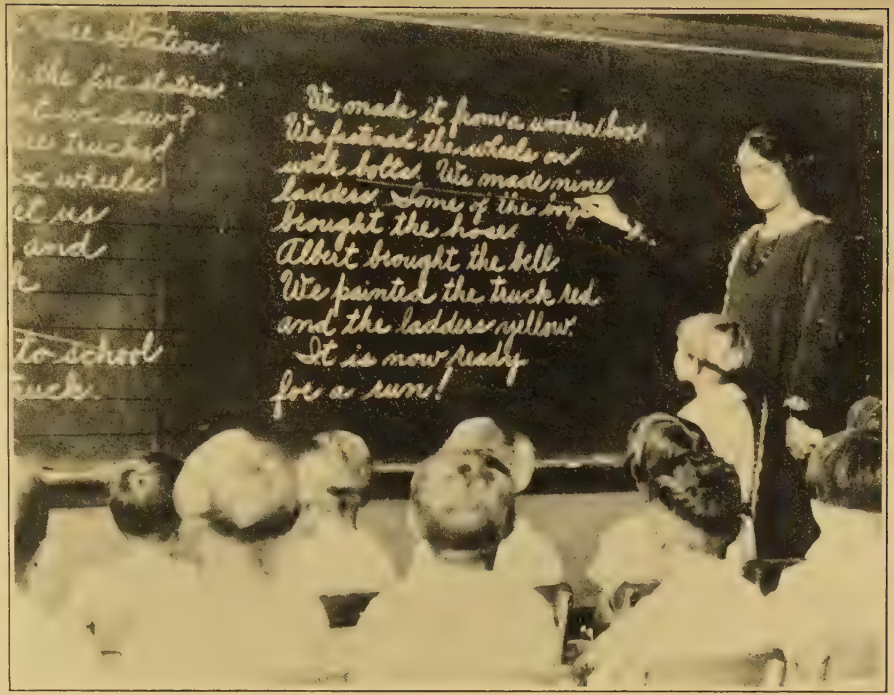
In 1921, all such studies were combined by Thorndike,[1] and were supplemented by extensive word counts of a variety of other material, such as children's literature, the Bible, English classics, elementary-school textbooks, and books about cooking, sewing, farming, the trades and similar practical everyday sources of usage. The Thorndike *Word List* gives alphabetically the ten thousand words most commonly used in the above types of literature, so arranged that it is possible to see the relative frequency of usage of each word. All the words are classified so as to show in which five hundred and which one thousand of the first five thousand each word falls as to frequency of usage; and within the first five hundred words there is a further classification into hundreds. In addition to the complete alphabetical list of ten thousand words, the first twenty-five hundred are given in five separate lists of five hundred each. Each of these lists is also arranged alphabetically.

By such word lists the vocabulary of any primer or first reader may be evaluated in an objective way.

Studies in children's vocabularies. In a similar way, a number of careful studies have been made of the vocabulary of children of various ages. Some of the most useful of these have recently been reported in the studies of the *Twenty-Fourth Yearbook* of the National Society for the Study of Education.[2] Such studies of the vocabulary of children have been used in working out the test and lesson exercises given in Chapter IV of this book. In preparing flash cards,

[1] Thorndike, Edw. L.: *The Teacher's Word List.* Published by Teachers College Bureau of Publications, New York City.

[2] See pp. 185 to 198 of the *Twenty-Fourth Yearbook,* part I, National Society for the Study of Education, for two of the best lists. One of these lists gives about one thousand words most commonly found in the spoken vocabulary of six-year-old children. Another gives about the same number of words most commonly found in an analysis of thirty-seven primers and first readers.


We made it from a wooden box.
We painted the wheels on
with bolts. We made mine
ladders. Some of the
brought the hose.
Albert brought the bell.
We painted the truck red
and the ladders yellow.
It is now ready
for a run!

READING MATERIAL BASED ON GROUP ACTIVITY, AS DEVELOPED IN A LONG BEACH CALIFORNIA, PRIMARY ROOM

word games, and other devices described in the latter part of this chapter, the teacher is advised to utilize the vocabularies used in these tests, as well as the vocabulary of the basic primer and reader used in the class.

Children's interests in reading. We must recognize that the average child comes into the primary room with, or soon develops, an interest in reading and a desire to learn to read. Books are recognized as a mystery that can give great pleasure. Stories that have been read to the child he would like to be able to read for himself. Pictures in the story books are recognized as having a relation to the printed words that have been read to him. New pictures in books present the lure of novelty and wonder. The child wants to know the story of these pictures, and wants to be able to get this story for himself.

What sorts of stories and pictures are most likely to capture and hold the child's interest in books? How can the lure to read be made permanent? Several careful studies have been made recently as to the sort of reading that primary children are interested in. Starch[1] found that, for grades I to III, three fourths of the content of readers dealt with animals, boys and girls, folklore, and poetry. In the upper grades "the classics, history and patriotism, biography, and poetry made up four fifths of the content of readers." He found "no specific content common to three or four of ten books of a given grade."

Other studies of this sort have resulted in a classification of elementary school readers into two general types, the fanciful and the practical. Most of the newer readers are quite decidedly of the one type or the other, although a few are compromises. Upon closer comparison of the content of the readers it will probably be granted that a three-fold

[1] National Society for the Study of Education, *Twentieth Yearbook*, part II, pp. 145–51.

classification would be more exact and more helpful in judging the values of some of the series. Definitions of the three types will help to make this clear.

By the practical is meant that type of reading material which gives concrete, usable information, such as the historical or biographical selection, the travel description, the scientific explanatory article. We may also include the material in the primers and in the readers for the first few grades that presents ideas or stories in a vocabulary of words in everyday use, so that a child may at the outset acquire a reading vocabulary that can be of practical value to him. This type of material has come to be referred to as the "work-type" reader.

By the fanciful is meant such traditional material as the folk-stories, legends, Mother Goose rhymes, animal stories, all more or less fictional or imaginative. Usually there is a large emotional element present, and this has given rise to so much of the teaching emphasis on oral reading "for expression."

But under this fanciful or imaginative class we must also include other material than the classical or traditional folk- and fairy-stories. There is a large element in many of the school readers of imaginative material of a rather inane type, that has either been invented in imitation of the older fables and folk tales, or else deals with play experiences of children, or of the adventures of children or of animals. Much of this modern imitative fanciful material has very little value from an educational point of view. It contains no informational values; in fact, is often misleading, as in the case of imaginative animal stories. Neither does this imitative material bring the child into contact with such stories as have become classical folk-lore, myth, or legend. The comparison may be made clear by a concrete illustration. Every child is entitled to a contact with the classic

tale of *The Three Little Pigs*, but some modern invention about the adventures of a pig usually has no merit either as fact or fancy.

Content of the newer readers. Several of the newer series of readers [1] have substituted a considerable amount of the more practical, informational material for the fanciful and imaginative stories. In such series as the *Learn-to-Study Readers*, this practical element is emphasized. To some, such readers may seem open to the criticism that they are too practical. Much of the material used deals with the colorless commonplaces of the child's schoolroom and ordinary activities. Perhaps it should be left to the teacher to supplement either type of material with the other. If the basic reader required for the class is developed on fanciful, folklore, or myth material, supplementary readers and exercises should be of the more practical and informational type. If the basic reader is of the newer, practical type, the supplementary material may be drawn from the fanciful material. Little attention, however, should be given to the modern inane imitations of the classical fanciful material.

Supplementary preparation for reading. While it may be expected that a large part of the preparation for reading will be done by the home and kindergarten, there is still a large

[1] *Learn-to-Study Readers*, Book One, by Ernest Horn and Grace Shields. Ginn and Company, 1924.

The Boys' and Girls' Readers, by Emma Miller Bolenius. Houghton Mifflin Company, 1923.

The Silent Reading Hour, by Buswell, Guy Thomas, and Wheeler, William Henry. Wheeler Publishing Company, 1923.

The Pathway to Reading, by Coleman, Bessie B., Uhl, Willis L., and Hosic, James F. Silver, Burdett and Company, 1923.

The Modern School Readers, by Thompson, Ruth, Wilson, Harry B., and Wilson, Guy M. Harr Wagner Publishing Company, 1924.

The Happy Children Readers, by Pennell, Mary E., and Cusack, Alice M. Ginn and Company, 1925.

The Field-Martin Primer, by Field, Walter T., and Martin, Katharine. Ginn and Company, 1925.

element of preparatory work to be done by the primary teacher. Even after the actual learning of reading is well under way, two phases of preparatory work must be continued systematically, namely:

(1) Intensifying and expanding the child's interest in reading.
(2) Increasing the child's range of ideas and his related speech vocabulary.

In both these objectives the newly learned art of reading will soon become an ally — reading will increase the interest in reading and will enrich the stock of ideas. The use of the new art will motivate its development in a gradually cumulative way. During the first grade, for most children, there will not be, however, sufficient fluency to warrant relying on reading itself to intensify the interests or to keep the mind's store of concepts expanding rapidly enough.

A progressive, systematic line of work, accordingly, must be planned to attain these ends. Story-telling or the reading of selections, left to be completed by the children themselves, are among the most common methods used to foster and increase the interest in reading. Even in the first grade it is possible to arouse the interest of the group in a book or story by having the child who has read the selection tell the group about it. In many cases the library table, with its alluring variety of booklets, especially of the well-illustrated sort, will be sufficient to motivate the desire to read. Many of these booklets in the room library can be made up by the teacher by pasting stories of a few pages each into folders, the material being secured by cutting out the best parts of supplementary readers too much worn to be used entire. Cut-out pictures, especially in colors, may be pasted on the front cover to attract the child's interest.

Reading to the children. Reading parts of stories to the children as a means of fostering interest in reading has al-

ready been referred to. Such reading may also serve further purposes. A single selection may be read entirely from a book containing a collection of similar stories. This will serve to commend the whole book to some of the children. Such reading, especially of entirely new material, will serve the further purpose of expanding the children's range of ideas and vocabulary, especially if thoughtful attention is given to discussion and explanation. If the reading is done carefully and with animated expression, as it should always be, a model for expressive reading is set for the children and the ear is trained for more exact pronunciation. This reading to the children may be used as an effective substitute for story-telling, if the teacher has not learned to use that art effectively. It may well be made a part of almost every day's program in the second semester of the primary grade, or it may be alternated with the story-telling if the teacher can do the latter type of work well.

Incidental vocabulary work. There are a number of different avenues for the development of the child's vocabulary, such as:

(1) The objects and activities of the room.
(2) Explanation of the unfamiliar words and ideas that are met in the reading exercises, especially in the primer and first reader.
(3) Unfamiliar words and ideas that are met in the supplementary readers.
(4) The strange words children may meet in their home and playground associations, which they should be led to ask about in class.
(5) A systematically planned list of new words, introduced by the teacher herself. These lists will be developed at first from the list included in the test exercises given in Chapter V. If further material is desired, words may be selected from the Thorndike *Teacher's Word List*, described on page 206. Many helpful suggestions will be found in Gates, A. I., *The Improvement of Reading*.

Teaching the first words. Before we can consider the

teaching of the first words, we must answer the following questions: How does the child see a word? What does he see in a word? And how readily can the word be fixed?

Through our observation of children's reactions to rapid-motion word and phrase devices, we recognize that children look at words differently, and hence see the same words differently. The beginner visions some words from right to left, from left to right, from bottom up, from the top down, or from the center out. Since he has no established habit of seeing words from left to right, it becomes the task of the teacher of beginners to establish this habit.

As a result of much observation and experimentation we have seen that many factors condition what is perceived in a word, and how readily the word can be fixed. The picturesqueness of the word-silhouette would seem to be most potent in attracting and holding the child's interest. Thus, very irregular words, tall, short, and long words are more readily learned than uniform, regularly shaped ones of average size. Also the ideas which the symbol calls up tend to make one word easy and another difficult to fix. A word calling up interesting, familiar, picturable, and humorous images is more easily fixed than its opposite.

The establishment of the initial vocabulary is one of the objectives of the beginning work in reading. This vocabulary, which will be drawn from the first few hundred words listed in the Thorndike *Teacher's Word Book*, the children's vocabulary, and the basal primer, if one is to be used, is taught through the use of pictures, stories, and objects. The use of the pictures and objects is not for the purpose of associating the picture or object itself with the word symbol, but to associate with the word symbol the idea which the picture or object conveys.

The word should be presented for the first time in its setting of meaningful content and should then be isolated. Af-

ter this it should be drilled upon according to the scientific distribution of practice. Good teaching involves repeated telling in order to keep the association of idea and symbol alive and rooting.

The use of word devices. Through the use of word games, in which all the factors of good game construction are incorporated, the drills can be conducted with joy and mastery. In this connection it has been found that devices which operate rapidly in exposing words and phrases call out more rapid responses from the child with accompanying pleasure and less fatigue.

There is a peculiar danger in a slavish use of flash cards. The device is good, however, if it is not carried to an extreme. It has been found that children who can call off the names of a pile of cards may be unable to recognize the same words encountered in context. Far better psychologically than the persistent use of word cards is the combining of words in many different meaningful phrases, to present the vocabulary.

Teachers using word and phrase devices must be cautioned to make sure that the device (word card) is held on the eye-level of the child, and squarely before him; for a word viewed at an angle looks quite different, and at times is not recognizable as the same word.

The first work in phonics. The primary teacher's work in phonics will be determined in large part by the particular series of readers used in her school, and by the Teacher's Manual accompanying the series. Different "methods" of teaching reading, as developed by the authors of different series of readers, can be disregarded only by the teacher who has had a thorough training in the teaching of primary reading in the normal school, or by one who has had a varied experience with several different systems. Such a teacher can use a particular system with critical judgment and make

such alterations as experience may suggest. The inexperienced teacher must follow the details of an adopted textbook more slavishly.

No experimentation has been made to evaluate the merits of the various systems of reading and phonics that have been put on the market. Each has some merits; none has all. Each system has a wide usage and enthusiastic advocates. Comparative studies have been made, and a few general principles for the teacher's guidance have been evolved. Most of these principles are a composite of practices that have been found to be agreed on in most of the phonic systems.

Before stating some of the general principles that should govern a teacher in the use of phonics, some fundamental explanation for the inexperienced teacher may not be out of place.

Phonic systems a means to an end. If we think of reading as consisting of the recognition of words, and think of the single word as the unit in the reading process, it is evident that words may be separated into smaller units for various purposes, into letters for spelling and writing, into syllables for writing, printing, and pronunciation, and into phonograms as an aid in sounding or pronouncing. The phonogram is an artificial device of dividing words which sometimes coincides with the letter or syllable units, though more commonly we think of the phonogram as different from either. In a broad way a phonogram may be defined as a letter or a group of letters constituting a commonly used sound unit. Different phonic systems have arbitrarily made different lists of sound units, sometimes following general principles in the grouping of letters so as to have either consonants or vowels at the beginning of the phonogram. Other systems do not confine themselves to either principle or division, but use both.

The application of these principles may be illustrated by the phonetic analysis that a child might make of a long new word such as *caterpillar*. One child would identify the word by dividing it into such single-letter and phonogram units as,

c-at-er-p-ill-ar.

Another might analyze it as follows:

ca-ter-pil-lar.

Others might make still different artificial sound units, each analyzing the word by such letter groups as had been taught in his "system."

It must be recognized that all phonic systems are merely a means to an end. The purpose is to make the child independent in his reading by furnishing him with a mechanical means of sounding new words to himself, at first audibly, and later without actually sounding the word parts, so that the visual word symbol can be translated into a sound symbol. This will convey the idea to his mind, if in his previous experience he has already made the association between the word sound and the concept.

The whole question as to the value of such phonic analysis and the relative merits of the two general types of phonograms, is largely a matter of opinion still. A few experiments have been made which indicate that some children can learn to read readily and well without any training in phonics; others evidently are greatly helped by such work. Other surveys of the relative effectiveness of different systems show that some of the children trained by the consonant-vowel type of phonics, the *ca, de* type of phonogram, will rank as high or as low on standardized reading tests as pupils trained with the vowel-consonant system, using the *at, an, ill* type of phonogram.

The most important phonograms. One of the valuable

contributions made in recent studies of phonic systems has been the scientific determination of the relative importance of the different phonograms used in either of the general types of phonic work. One of these studies [1] gives us the fifty most common vowel-consonant phonograms found in the words of twenty commonly used primers and first readers. The fifty phonograms, in order of their importance are:

final *e*, *ee*, *ed* (ending), *ing* (ending), *er* (ending), *ea* (eat), *an*, *un* (our), *en*, *ay*, *oo* (good), *an*, *oo* (moon), *ar*, *ing* (ring), *ow* (cow), *ow* (show), *ill*, *at* and *atch*, *it*, *in*, *y* (cry), *at*, *ai*, *en* (ending), *ee*, *ea* (bread), *all*, *ick*, *ake*, *or*, *eep*, *ook*, *ear*, *ell*, *op*, *un*, *ir*, *ight*, *old*, *ot*, *oa*, *ap*, *and*, *ock*, *ail*, *ed*, *on* (apron), *ain*, *or* (*parlor*).

The initial combinations of two consonants were also ranked in order of frequency, as follows:

st, *th*, *sh*, *gr*, *br*, *dr*, *wh*, *pl*, *fl*, *sp*, *ch*, *bl*, *sw*, *tr*, *cr*, *cl*, *sl*, *sn*, *sm*, *tw*.

The practical value of this study is shown by the application of the results to the reading work in the first grade. The report states:

Our basic first-grade phonics list is, therefore, the following: all short vowel sounds; all simple consonant sounds; rule for lengthening vowel before final *e;* the following phonograms and letter groups: *ee*, *ed* (ending — looked), *ing*, *er* (ending), *ea*, (eat), *an*, *ou* (our), *en*, *ay*, *oo* (good), *oo* (moon), *ar*, *ow* (cow), *ow* (show), *ill*, *st*, *th*, *sh*, *gr;* optional, *at*, *it*, *in*, *y* (cry), *ai*.

Another study [2] gives us the relative importance of the initial consonants, final consonants, vowels, and phonograms of the consonant-vowel type, as determined by their relative

[1] Vogel, M., Jaycox, E., and Washburne, C. W.: "A Basic List of Phonics for Grades I and II," reported in the *Elementary School Journal* for February, 1923, vol. xxiii, pp. 436–48.

[2] Osburn, W. J.: *The Relative Value of Letter Sounds and Consonants.* Mimeographed circular issued by the State Department of Public Instruction, Madison, Wisconsin. September, 1923.

frequency of occurrence in the first twenty-five hundred words of Thorndike's *Teacher's Word List.* The initial consonants in order of their importance are:

s, t, c, p, d, f, b, r, m, l, w, g, n, h, v, th, st, pr, ch.

The final consonants rank as follows:

r, -n, -l, -s, -t, -d, -m, -p, -nt, -re, -ce, -se, -th, -nd, -st, -ve, -ng, -te, -ck, -c, -ch, -f.

The relative value of vowel combinations is:

short e, short i, short a, long a, short o, -er, long i, long o, long e, short u, short y, -or, -ar, ea as in *each, long u, o* as in *son, ee* as in *meet, -le, ou* as in *our.*

The relative frequency of the various consonant-vowel phonograms in the Thorndike list was as follows:

co, st, pr, re, de, th, be, se, ma, fo, pa, di, ch, fa, in, sh, ca, so, ha, br, la, gr, sp, su, wi, bo, to, tr, ho, mo, ro, sa.

When to begin phonics. The question as to when to introduce formal phonics work has not been made a matter of experimental study as yet, but there is a quite general agreement in the various systems to postpone the phonics work until the children have acquired a sight vocabulary of at least fifty words. When the work is first introduced, it is based on an analysis of such words as have been already identified as whole word units, and then gradually proceeds both by building up lists of other familiar words belonging to the simpler and more common phonogram "families," and by the phonic analysis of simple new words as they occur in the reading work. The study of words with silent letters is usually left to late first-grade or second-grade work, and the study of diacritical marks is introduced gradually, beginning in the third grade.

Practical reading projects in the first grade. The use of experiences real to childhood is a device of great worth in carrying out the methods of beginning reading. Near the beginning of the term the children make their own reading books. They both draw and paint poster pictures, mount them on cards, and tell one another what the pictures are about. The teacher makes a note of these explanations, and prints the titles underneath the pictures. These illustrated stories are placed around the room, and the children have a merry time reading one another's stories. Later the teacher gathers all the pictures together and binds them into a book entitled, *Our Very First Reader*. By this means the children are introduced to the physical manipulation which they will later exercise with respect to the primers they read. They learn the meaning of the numbers, how to open a book properly, turn the pages, keep the place, and how to hold a book.

Children at this age love to make collections. The wise teacher takes advantage of this very real interest and suggests to her class that they collect and bring to school signs, advertisements, posters, and labels of every description. The following is an inventory of what may come in response:

For Rent, For Sale, Fire, Exit, Entrance, Stop-Look-Listen, Railroad Crossing, Danger-Keep-Away, Post No Bills, Hands Off, Beware of Dogs, Table Board, Fresh Eggs, Ice, Eat More Bread, Try Our Cakes and Candies, Say it with Flowers, Car Stop, No Left Turns, School Stop, No Agents or Peddlers.

Some of the above listed signs were purchased; other similar materials were found on wrappers on cans and bottles; some were on handbills; some were to be found on the walls of the school buildings; some were labels on crates, boxes and barrels; some were found in the advertising sections of the newspapers; some were parts of discarded billboard signs; and many were from the shops, stores, offices, and business

houses of the children's parents, variously employed. The children recognized in these signs words that they knew, and kept a record of all they could read.

There are always opportunities in the primary room for the legitimate use of reading — such as, for example, labeling a doll house just painted, *Wet paint, do not touch*, or this sign posted near the doll corner, *You may play in the doll corner if you have a doll.*

At one time the sand box was planted with seeds, forming a garden. Each child put his name over the seed he had planted, a fence was built about the garden, and this sign posted on the gate, *Do not play in the sand garden, it has been planted.* These notices and signs appeared most reasonable to the children, and were learned with much less drill than reading matter which was less closely connected with their immediate experiences.

The children have found it a convenience to label the contents of the different cupboards, to put a sign of invitation on the outside of the classroom door when they expect a mother visitor, and to list the names and duties of monitors of the class. Building block villages on the floor gives natural opportunity for labeling streets, hanging a sign over the hotel, railroad station, school, post office, church, stores, and theatres.

In every first-grade room there are a host of manual-arts patterns — patterns of dolls, trains, animals, popguns, wastebaskets, kites, shopping bags and so on to be constructed. These patterns can be placed in a large box marked "Patterns," and each pattern put in a properly labeled envelope with directions for making the toy or object printed on the outside. The child who is preparing to construct a toy will first be directed to the proper box, and there will sort the file of envelopes until he finds the label he wants and then read and follow the directions for construction.

This device not only builds habits of order and neatness, but it is a very good test of comprehension as well.

With Christmas approaching and the interest in gift-making high, it has been found advisable, after many discussions with the children concerning appropriate gifts for the different members of the family, to list all acceptable gifts opposite the name of the one to whom they seemed best suited. This chart is then posted in the room and referred to over and over again before a new present is started. Through this means reading appeals to the children as a vital need.

The play life of little children is rich with examples of genuine activities purposeful to childhood. These activities, viewed in their completeness, might be classified as play projects. Reading, in these play projects, contributes to their completeness but never becomes an end in itself. An activity curriculum is filled with just such rich experiences in which reading functions purposefully.[1]

Grouping the words in spans. If, in addition to the interesting and familiar material presented, the words are grouped in natural thought-units such as,

a little boy had a dog,

the child will read by grouping properly the words in spans instead of merely calling the words. It has been discovered, through several years of primary reading experimentation on this one point, that children recognize a natural group of familiar and logically associated words, such as "little doll," for example, as rapidly as they do either the word "little" or the word "doll" when taught as a single word and with no added initial drilling. Dr. Buswell has termed this "reading by thought wholes."

[1] One of the most helpful books for plans for such reading projects is *How to Teach Silent Reading to Beginners*, by Emma Watkins, especially pages 105 to 125.

By commencing at once to increase gradually but steadily the child's span of recognition we are eliminating unnecessary pauses, and thereby cutting down on the time spent during these fixations, thus both increasing speed and raising comprehension. This functioning of a wider perceptual span affords an extent of area sufficient to permit the eye to fall into a certain rhythm of movement. This uniform rhythmical reading-pace in the primary grade is emphasized at first through the voice, the swing of the arm (when reading from a large wall chart), and the eye. Seeing and recognizing symbols is a very recent skill of civilized man's, but when we link muscular activity with it we go down deep into the realm of animal and primitive habit and link the two skills in fixing the new symbol.

The place of silent reading. The most outstanding characteristic of the newer series of readers is the emphasis put on silent reading. This is especially true of the readers developed by educators who have been connected with the scientific investigations of reading.

Emphasis on silent reading in the upper grades has been strongly urged for some years. It has been gradually urged more and more, until at the present time the need for beginning training on silent reading habits and methods has been extended to include even the primer and first-reader groups. The silent-reading habit and efficiency in that activity are being recommended as an important means to one's whole future development — vocational, civic, and cultural. In contrast it is pointed out that oral reading has little social value for the adult. The process of oral reading is necessary in school only to check on the child's learning of the reading art. The older idea of having a great deal of practice in oral reading for the sake of developing "expression" is now being supplanted by exercises in story-telling by the child, in dramatization, and in topical recitation.

Testing reading progress. Within the last few years some very excellent test material for first-grade reading has appeared. In connection with her readers,[1] Miss Emma Miller Bolenius has compiled a series of thirty diagnostic tests in first-year reading; twenty-one weekly tests for the Primer, including a final speed and comprehension test; and eleven semi-monthly tests in the First Reader, including two speed and comprehension tests. The five purposes of these tests she states as follows:

1. To apply the intelligence-testing idea to first-grade work.
2. To furnish a tangible basis (a diagnosis) for dividing a class into superior and inferior groups, or for checking up on a permanent division of a large class.
3. To give such frequent opportunity for "checking up" and for regrouping that the teacher can more readily detect where inferior pupils are weak, and center on correcting those weaknesses.
4. To release the superior group from unnecessary drill, and give them opportunity to progress at "their own gait."
5. To save the teacher's time and patience, as well as the children's.

An indication of how completely Dr. Buswell has handled the problems of progress-testing and records in silent reading is shown in his short-exposure phrase cards and practice exercises in careful silent reading which accompany *The Silent Reading Hour*, First Reader.[2] In the practice exercises in careful silent reading Dr. Buswell has prepared an attractive booklet of thirty-six sheets and a neat cover. The sheets are composed of an interesting picture with a story and directions for coloring. Some of these sheets are in the form of puzzles. As the children complete the rate and comprehension studies they fit them into the cover to take home. Further testing of the child's reading pro-

[1] The Bolenius Readers. Houghton Mifflin Co.

[2] Buswell, G. J., and Wheeler, W. H.: *The Silent Reading Hour.*

gress can be made with the Gray Oral Reading Test and with the Haggerty Reading Test (Sigma 1.)

The use of devices in teaching reading. It is soon recognized by the primary teacher that a great part of her work in teaching the child to read involves a considerable amount of drill work. First steps in word recognition, in gradually discriminating between words that look much like one another, in securing correct pronunciation, in starting good eye-movement habits, in applying phonic elements in the analysis of new words, and in other of the primary activities, all involve constant repetitions until the child's responses become automatically correct. This constant repetition in group and individual drill lessons becomes a monotonous burden to both teacher and children, unless the teacher makes use of a great variety of devices which will motivate a constantly renewed interest and help to make the drill work tolerable. This problem of introducing constant variety and new interest has been solved, for many of the most successful experienced primary teachers, by the invention of a great number of devices and games which make a strong appeal to the child's play instinct. Learning of the drill type, instead of becoming a grind, now becomes an absorbing pastime.

An effort has been made, in the chapter immediately following, to furnish the primary teacher with a great variety of such games and devices, carefully selected from a great number that have been collected and invented during years of work in the primary room. The most successful of these devices have been selected and described. Complicated or expensive devices have not been included. Simple descriptions and illustrations are given. Practically all the devices can be made by the teacher or pupils, with very inexpensive materials. The games can be worked out from the directions given, as has been demonstrated by several years of experimentation with them in the training of practice teachers.

CHAPTER X

DEVICES FOR TEACHING PRIMARY READING

Reading games

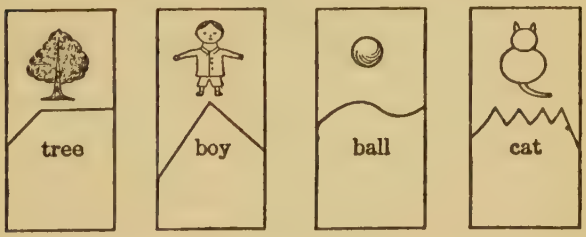
The list of reading games presented here proposes to be merely suggestive, for in almost all cases one will need to adapt the game to the course of study, to the series of readers used, to the grade vocabulary, and to the particular class and community needs, as well as to individual abilities and interests.

It has been found that the games and devices are best handled when they are placed individually in large envelopes, 9 x 12 inches in size, and kept in a substantial file. The games in the envelopes are graded, numbered according to difficulty, and placed in the file. On the outside of each envelope the instructions for playing the games are clearly printed and simply written. In writing these instructions great care should be exercised to keep within the vocabulary-range of the class, introducing no more than two or three new words to the game, arranging for sufficient review of them in subsequent games, and as far as possible choosing words that have a high rating in the Thorndike *Teacher's Word Book*, or in the vocabulary used in the tests in Chapter V.

For supplementing the game file it has been found helpful to use individual or class graphs. As the child successfully completes a game, and has it checked by the teacher or pupil-teacher, he records his progress in crayons on the graph. This device not only aids the teacher in quickly locating those children that could profit by a few moments of intensive drill, now and then, but also motivates the

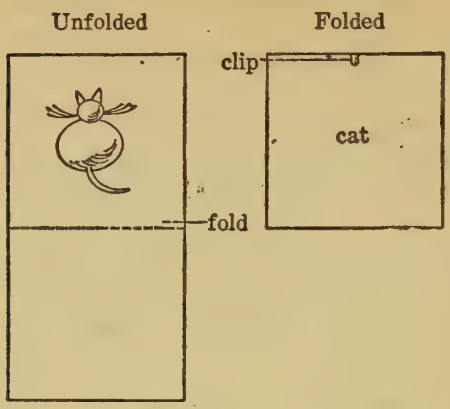
child's progress and objectifies it to himself, and at the same time affords an excellent and authentic report for the parent.

Game 1. Puzzle Cards



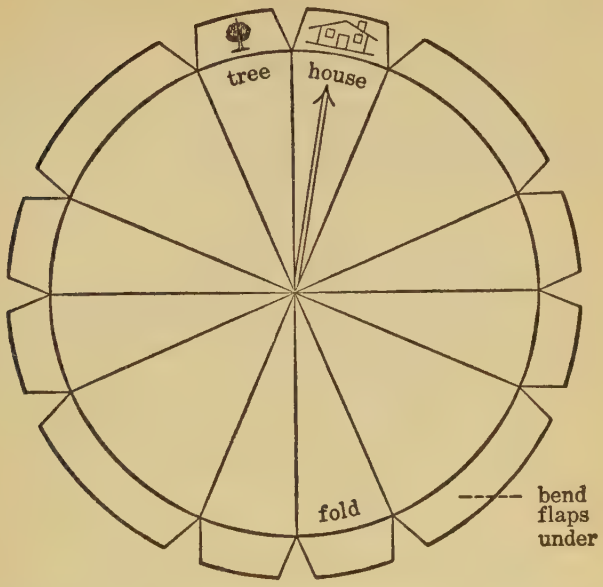
Cut cards of the same size irregularly into two parts. Be sure that no two cards are divided the same way. See illustration. On one of the parts place a picture, on the other part print the name of the picture. Fitting these parts into place makes a fine matching game for beginners. It is lots of fun, and it also teaches them to associate picture and word.

Game 2. Naming Pictures



Use sheets of heavy paper, $4 \times 2\frac{1}{4}$ inches and fold in halves. On the inside of each paste a small picture, and on the outside print the name of what is pictured inside. Fasten the folded sheet with a clip so the child will see only the word on the outside; but if uncertain he may remove the clip and see the picture, thereby teaching himself. Make about 25 different words. Place them in an envelope. Print the following directions on the outside: *Name, if you can, all the words without looking at any of the pictures.*

Game 3. The Word Clock



Prepare a large cardboard circle with a movable clock hand in the center. Pin or snap, all around the circumference, perception cards with pictures on the back to correspond with the words. This is a very good group game. One child acts as teacher and umpires the game. The first player spins the hand and names the word it stops at. If he has named it correctly, he may take a counter. If he is wrong or in doubt, he looks at the picture under the card and loses his turn.

Game 4. The Goose Pen

Children stand in a semicircle and the teacher flashes cards to each child in turn. The one who misses is a goose and goes into a pen. The goose in the pen stays there until he or she catches some one or pronounces a word correctly before the one called upon has time to answer. The object of the game is to stay out of the pen.

Game 5. Busy Squirrels

Let the children play they are squirrels gathering nuts. Use flash cards to represent nuts. Place these along the chalk tray. The teacher calls a word or a phrase. The child who sees it first pronounces it and takes it to his table or seat, which is his tree. The squirrel who gets the most nuts at the end of the game is the winner.

Game 6. Drawing Instruction Cards

Prepare a sheet of instructions to be carried out at the completion of a story in the reader, as, for example: "*Draw all the animals of the story. Draw the hero. If the little girl visited her grandparents, draw the little girl. If not, then draw her pet,*" etc.

Game 7. Blackboard Directions

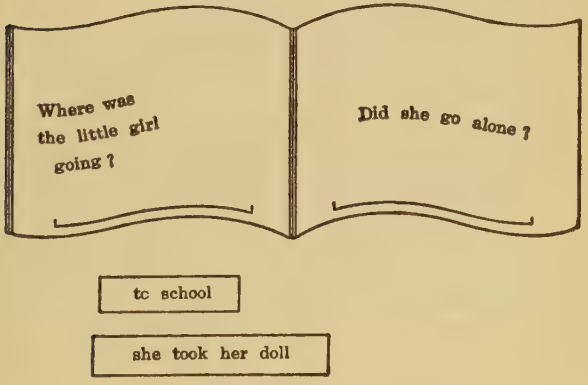
Such words as *run, fly, stand, sit, hop,* etc., are written on the board. A child's name is then written on the board. He must read his name and perform the action. Sentences may be used also.

Game 8. Activity Instructions

Prepare such cards as the following, the materials mentioned to be secured, and the plan worked out, at leisure moments:

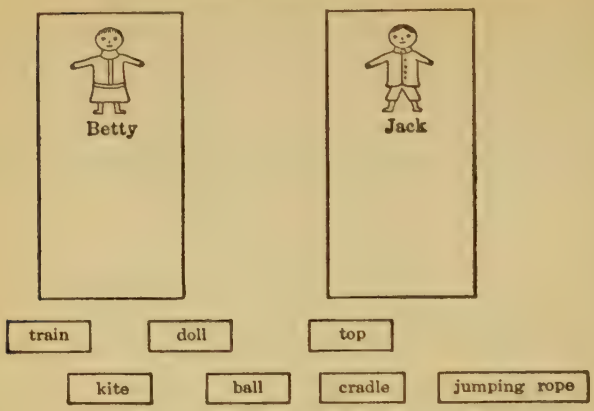
Get a piece of drawing-paper 6 x 9 inches. Get a yellow and a brown crayola. Draw and color three little chickens, a brown chicken house, and a yellow duck.

Game 9. Reading-Word Drill Stories



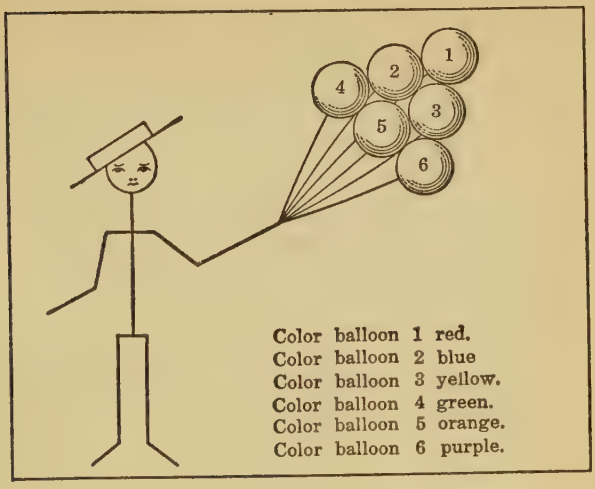
Make a small book of stiff paper. On each page print or paste a question pertaining to a story in the reading and including the hard words for drill purposes. Below the question paste a pocket to hold the answers, which are kept in an envelope fastened to the outside of the book. The child removes the answers from the envelope and proceeds to place them in the pockets under the proper questions. When this is done, he may read the story book to his teacher. When he has finished with the little booklet, he places all the answers back in the envelope.

Game 10. The Twins' Birthday Party



Place in an envelope the following printed story: "*Jack and Betty are twins. They had a birthday party. They received many pretty presents.*" In the same envelope place pictures of Jack and Betty and a host of small cards labeled with the names of boys' and girls' toys. The child places the two pictures before him on the desk and then puts Betty's presents under her picture and Jack's presents under his picture.

Game 11. Coloring Balloons



Prepare a card about 6 x 9 inches with the names of colors numbered as shown in the illustration; also outline balloons numbered *1*, *2*, *3*, *4*, *5*, etc. The child must be able to read the numbers and the words in order to color the balloons correctly.

Game 12. Things I Like

Print on cards a set of headings such as:

1. *Things I like to do*
2. *Colors I like*
3. *Animals I like*
4. *Foods I like*

Have a set of small cards to go with the headings, each card having on one side a picture and on the other side the corresponding word. The child, using either pictures or words, arranges the cards under the proper headings.

Game 13. Surprise Box

Keep a surprise box or book for the superior child who gets through his work quickly. He will provide himself with the proper materials, take the box or book to his seat, and carry out such directions as the following, which he finds inside:

1. *Draw a cat and color it black.*
2. *Get a new book from the library and read a story.*
3. *Draw a picture of a house on the blackboard.*

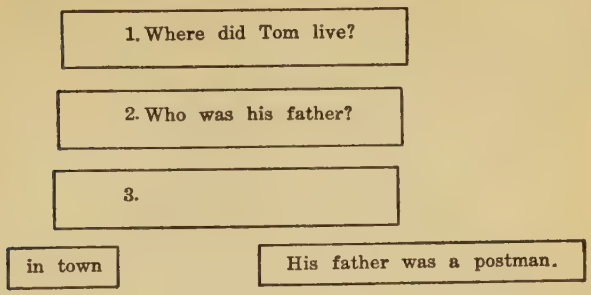
Game 14. Definition Questions

In a large envelope place many questions printed on strips of paper, such as the following:

1. *What is used for cutting?*
2. *What do we sit on?*
3. *With what do we eat our food?*

On small cards paste pictures that answer the printed questions. The object of the device is to properly match pictures and questions. Use the words in the *Definition Test*, Test VII, in Chapter V, for sentences in this game.

Game 15. Story Questions



Place a story in an envelope. On numbered strips of paper print questions about the story. On separate, unnumbered, strips print the answers to the questions. The child first reads the story. Then he arranges the questions in numerical order on his table and places the correct answer by each.

Game 16. Broken Sentences

Print sentences on cardboard strips and then cut them into two pieces as follows:

1. *The fox lives* *in a den.*
2. *A bird lives* *in a nest.*
3. *The sheep give us* *wool.*
4. *Apples grow* *on trees.*

The child must put the parts together correctly.

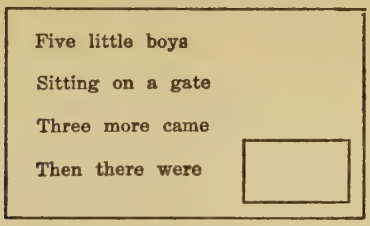
Game 17. Color Questions

In an envelope place strips of paper with such questions as the following printed upon them:

1. *What color is an orange?*
2. *What color is a frog?*
3. *What color is the sky?*
4. *What color is a banana?*
5. *What color is a potato?*

In the same envelope have squares of colored paper. The object of the game is to place the proper colored square after each question. Use the materials in the *Color Test*, Test I, in Chapter V, to expand this game.

Game 18. Number Rhymes



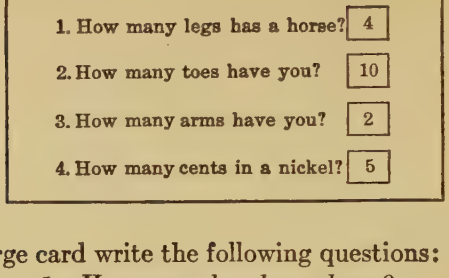
In an envelope place number rhymes in each of which the final word — the number — has been omitted. The child is to complete the rhyme by providing the correct number. The answers are printed on cards, one side bearing the figure and the other side the written numeral. These also are found in the envelope.

Illustrations:

Five little boys
Sitting on a gate
Three more came
Then there were
.....

Four little apples
Hung on a tree
One fell off
Then there were
.....

Game 19. "How Many?"



On a large card write the following questions:

1. *How many legs has a horse?*
2. *How many toes have you?*
3. *How many arms have you?*
4. *How many cents in a nickel?*

At the end of each question cut a square hole in the card as in the illustration. The child places this question card over a piece of paper, reads the question, and writes the number-answer on the paper under the hole at the end of the question.

Game 20. Drawing a Story

On a card print the following:

Mary is on the grass.
She is playing ball.
The ball is red.
Her dress is blue.
Her dog is playing with her.

The child provides himself with proper materials and makes a picture to correspond with the story.

Game 21. Yes and No Game

In an envelope place questions such as the following:

1. *Can a cow fly?*
2. *Can a rabbit hop?*
3. *Can a pig read?*

Have many *No* and *Yes* cards also in the envelope. The child reads the question and places a *No* or a *Yes* word after it. Use other questions from the Yes and No Test, Test XVII, in Chapter V, to expand this device.

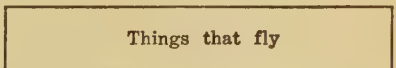
Game 22. Picture Labels

Fill an envelope with many lovely pictures featuring objects of general interest. Place in the same envelope an equal number of labels. The object of the device is to label the pictures properly. Use the list in Test VI in Chapter V for other material for this game.

Game 23. Classifying Object Words

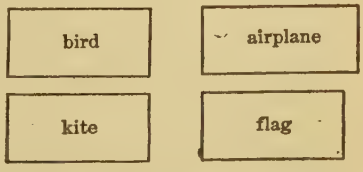
Place in an envelope statement cards such as the following:

1. *Things that fly.*
2. *Things that swim.*
3. *Things that run.*



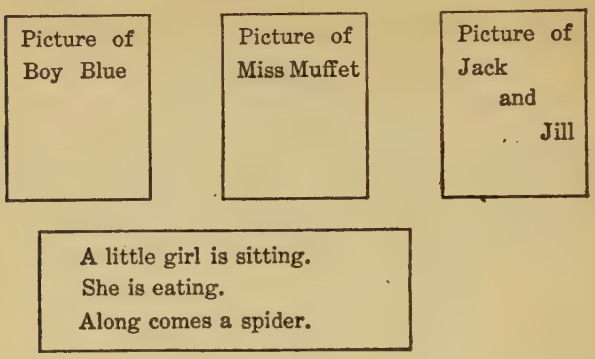
Also answer cards such as:

Bird	*Airplane*
Bee	*Fly*
Fish	*Dog*
Horse	*Whale*



The object of the device is to classify the words properly. Other action statements and answer cards may be used.

Game 24. Mother Goose Characters


Picture of Boy Blue
Picture of Miss Muffet
Picture of Jack and Jill
A little girl is sitting.
She is eating.
Along comes a spider.
The boy is not working.
He is asleep.
His suit is blue.

In an envelope place six or eight Mother Goose pictures. In the same envelope place sheets bearing printed descriptions of the pictures. The object of the game is to give a Mother Goose character name to each descriptive sheet.

Game 25. Following Directions

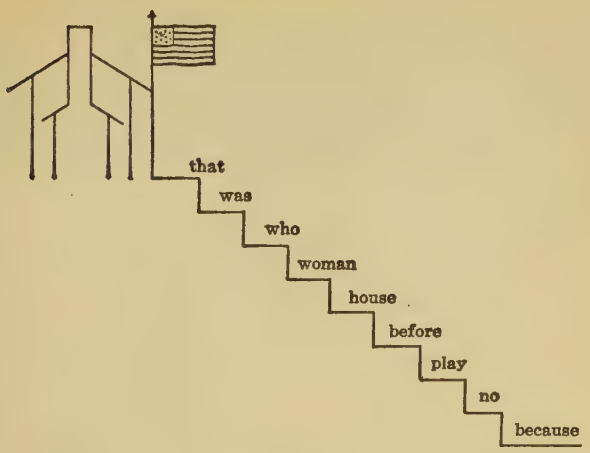
This little comprehension game can be played by groups of children alone or by teacher and class. The pupils draw slips from a hat and silently carry out the directions.

Suggested directions:

Please shut the door.
Please open a window.
Show me your ears.
Show me your hands.
Make a number fourteen on the board.

The game is fun if played with sides, like a spelling bee. Many of the directions in Test II, *Following Directions*, in Chapter V can be used for this game.

Game 26. Going to School



Draw a schoolhouse with steps leading up to it. Write a word on each step. Two or more children may play. Each uses a bead or button as marker. Each time the game is played there must be an umpire or teacher — a child who has previously won the game. First one child starts up the steps. If he fails on a word, the teacher tells him what it is, but he must go back to the bottom step and wait for a new turn. The next child then starts up the steps and so on. The first child arriving at the "school" wins and is eligible to the position of teacher.

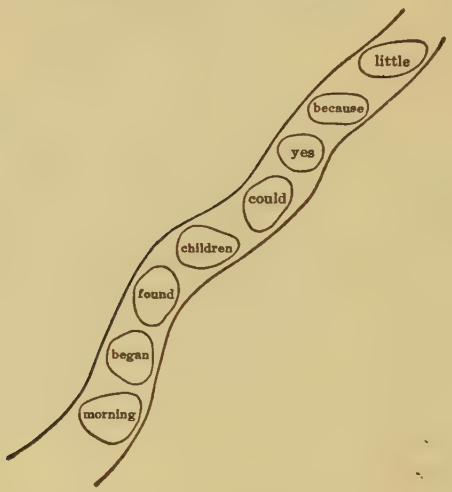
Game 27. A Railroad Trip

Draw a railroad track and as many stations as desired. Write a word or phrase at each station. Choose a conductor to call the stations and punch the tickets of those that answer correctly. The object of the game is to see who can take the longest trip without having a wreck. Winners become conductors.

Game 28. Finding Hard Words

Put a set of cards containing difficult words on a table and arrange the children around the table. Spread out the cards so that all can see them. Call for a word; the child who finds it holds it up and names it. If it is wrong he puts it back. The child holding the most cards at the end of the game wins.

Game 29. Crossing the Pond

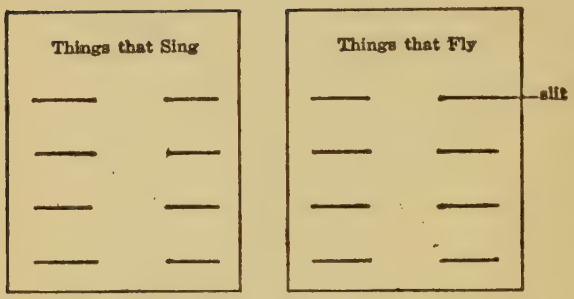


Draw parallel lines to represent a pond and then draw round stones in the pond forming a way across it. Write a word on each stone. The children try to cross the pond on the stones without falling into the water (missing the word). Those who miss or fall in must go home to put on dry clothes. The ones crossing safely are winners.

Game 30. Christmas Mail

Arrange perception cards on a chalk tray at the front of the room. Name the arrangement the post-office. Play it is Christmas time. Take turns in going to the post-office and getting Christmas cards and packages. The one having the most packages at the end of the game is winner and may describe the contents of each of his Christmas parcels.

Game 31. Which Is It

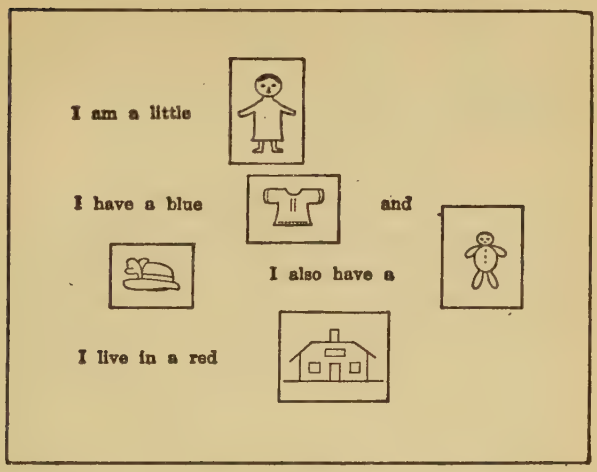


Place in an envelope sheets of paper, with slits to hold wedge cards, headed with such instructions as: "*Fit into this sheet the names of things that can sing.*" On another call for the names of *things that can run*, on another the names of *things that can eat, fly*, etc. In the same envelope place a collection of wedge-shaped cards with the names of *people, animals, objects*, etc., taken from the lesson. The object of the game is to place correct wedges into the proper direction sheet.

Game 32. Toy Patterns

A file of envelopes, each including a pattern and bearing, on the outside, instructions for the making of play articles, such as: *popgun, sunbonnet, valentine, doll*, etc.

Game 33. Stencil Completion Card



Print a story on a large card, with omissions here and there. Cut out oblong pieces of paper from the card at the place where the omissions are, forming a sort of stencil. Let the children place a piece of drawing paper of the same size under the stencil card, and draw the correct illustration in the holes in the stencil.

Game 34. The Fish Pond

Draw a circle on the floor or the blackboard to represent a fishpond. In the circle write difficult words or phrases. The children catch fish by pronouncing words correctly.

Game 35. Boxing Words

Let the children box words or phrases that they recognize in magazines or papers, and send them to New York or Chicago. This is done by putting a box or square around the words they recognize. The one who has boxed the most words wins.

Game 36. A Word Hunt

Hide a number of cards and have the children hunt and bring them to the teacher, telling what each word is. The finder may take only those words that he can read. The one finding the most words wins.

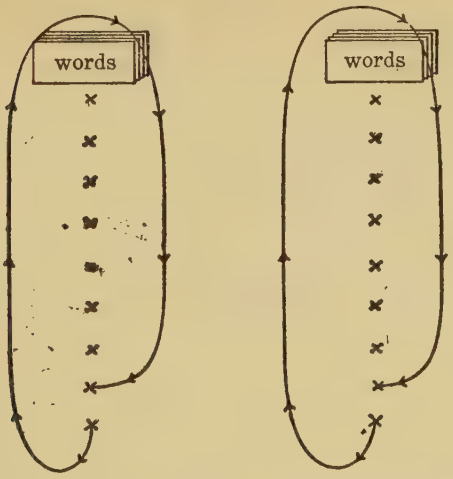
Game 37. Little Bo-Peep

Let the children play they are sheep, standing about the room anywhere holding up word cards. Little Bo-Peep stands in the center and tries to find her sheep, which she does by naming the words or phrases. Each sheep when found is conducted to a sheepfold in the corner of the room. The game is continued until all are safely shut in for the night. When Bo-Peep misses she takes the part of a sheep herself and the sheep holding the word she failed to name becomes Bo-Peep.

Game 38. The Easter Basket

Make a large Easter basket filled with eggs. The eggs are cut out of colored paper with a word printed on one side. The child draws Easter eggs out of the basket and may keep them if he can name them correctly. The child having the most eggs at the end of the game wins.

Game 39. The Relay Race

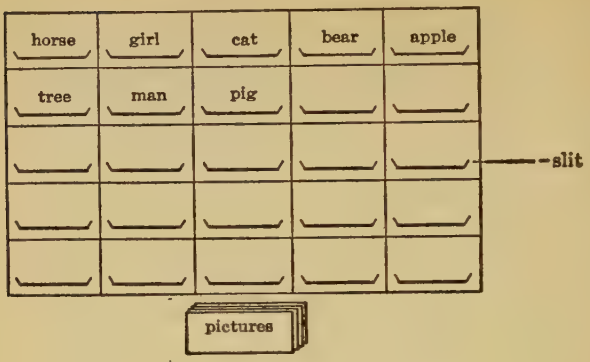


The children form two lines. In front of each line is a pile of word cards lying face down. On the signal *Go* the child at the end of each line runs to the front, lifts up the card and reads it. If he is right he takes the card with him and runs back, touching the hand of the next to the last child in line, who starts for the front. If he failed to answer the word correctly he must take his seat. The row that has the most children left standing, wins.

Game 40. The Circle Race

Draw a large circle on the blackboard with words written around the circumference at regular intervals. Two children with pointers play this racing game. At a given signal and place they start going around the circle in opposite directions. The one who gets back to the start first, after having named all the words correctly, wins.

Game 41. Picture Pockets

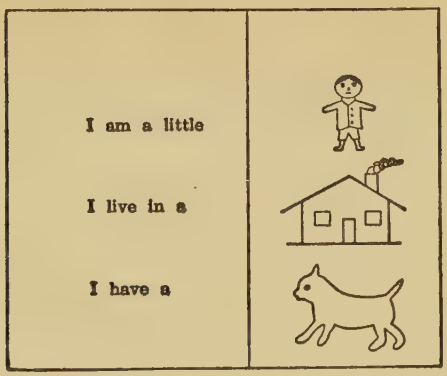


Two large cards are ruled into squares. Words are written or printed in each square with a pocket beneath each word for a corresponding picture. A deck of picture cards is given two children. They race to see who can place all of the pictures under the proper words first. The material in Tests III, IV, V, and VI, in Chapter V, can be used for this game.

Game 42. Another Relay

Two lists of words are written on the blackboard. The children are arranged in two lines before the lists. The first child names and erases a word and passes the eraser to the next child, and so on. The line finishing first, wins.

Game 43. Picture Completion Sentences



Print incomplete sentences on a card. The child places this card along the edge of a sheet of drawing-paper, and opposite each incomplete sentence draws a picture completing the thought.

Examples:

I am a little .....
I live in a .....
I have a ....., etc.

Game 44. Picture Cut-Outs

List words on the blackboard. The children draw or cut pictures from magazines to match the blackboard words. Have on a table large envelopes with the same words printed on the outside. The children sort their cuttings into the correct envelopes.

Game 45. Animal Books

Give each child two sheets, one with mimeographed animal pictures on it, and the other with the names corresponding to the pictures. The children may color and cut out the animals, labeling the pictures and making books.

Game 46. Matching Pictures

Set up a row of pictures along the blackboard ledge. As, for example; picture of a cat, a dog, a boy, a house, etc. Give each child a card upon which is printed a word corresponding to one of the pictures on the ledge. On a signal the children with word cards run to the ledge and bring back the picture corresponding to the word card that they hold. The child reaching his seat first with the correct picture wins.

Game 47. Famous Picture Stories

Provide small copies of famous pictures. Enclose in an envelope words and phrases descriptive of the pictures. The children place correct descriptions under the pictures.

Game 48. The Racing Board

X------child

cat	dog			
dog	hen			
boat	cat			
girl	man			
hen	girl			
man	boat			

X--------child

Two children play this racing game. The first one out of cards wins. Lace two boards, $11 \times 8\frac{1}{2}$ inches, together. Divide and line the boards in about sixteen squares. Cut two sets of words from discarded books and paste them in the squares so that every alternate column of words is upside down with reference to the column on each side of it. Half of the columns of words face the child who stands on one side of the board and the other half face the child opposite, and both children have the same set of words in columns before them on the playing board. See illustration. The two children stand opposite each other with playing board between them. Each child holds in his hand a pack of picture cards corresponding to the words on the board facing him. The children shuffle their cards and at a given signal begin to lay them down on the proper words. The first child out of cards wins.

Game 49. Santa Claus Toys

Make a cardboard Santa Claus with a bag on his back filled with cards upon which are printed the names of toys that children love. The children take turns in drawing word cards out of the bag and naming them. A child may continue to draw out cards until he fails to give correctly the name printed on the card. Then the opportunity to draw cards out of the bag goes to the next child. The child with the most word cards at the end of the game wins.

Game 50. Animal Flash Cards

Stand silhouette pictures of animals on the chalk ledge of the blackboard. Flash cards descriptive of the animals. Let the children reach quickly for the pictures as the cards are flashed. The flash cards are as follows:

Has wool
Has a long trunk
Gives milk

These are matched with pictures of sheep, elephants, cows, etc. The child having the greatest number of pictures at the end of the game wins.

Game 51. Calling Cards

This game is played like the game of authors. Have duplicate or triple sentences, words, or phrases printed on cards of the same size. Three may play. In calling for a card the child must read the entire sentence or phrase correctly. If the child who is asked has the card he must give it up to the one asking. All the cards of the same kind in one hand form a book, and may be laid down. When a player fails to get the card he wishes, it is the next player's turn. The player having the most books when all the cards are played out, wins.

Game 52. Completion Test

Once upon a time there was
a mother and four
pigs. They all lived
together in a little .
One day an old came
to the and knocked.

pigs

door

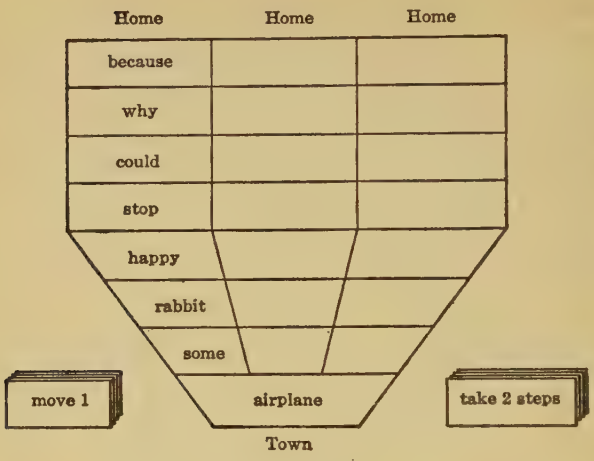
house

pig

wolf

Print on a card a story. Now and then leave out a word. Inside the envelope have all the words that were left out printed on small cards. The object of the game is to place these extra words into the correct spaces.

Game 53. Going to Town



Prepare a cardboard game-board similar to the one in the diagram. Three children play they are going to town. The object of the game is to see who gets there first. Have papers with numbers written on them, as indicated in the picture, which are turned upside down on the table. Each child draws a paper in turn. The first player makes as many moves on the game-board in the direction of "town" from "home" as his number indicates and says the word in the space where he stops. If correct, he places his paper in this space. If he fails to know the word he must return home and begin again when he gets his next turn.

Game 54. Numbering Sentences

Place a lot of sentences on the board and beside each write a number, but see that the numbers are not placed consecutively. The teacher calls out a number, and the child designated reads the appropriate sentence aloud, or the teacher reads the sentence, and the child designated calls out the number. The former is an oral reading drill, while the latter is a silent-reading drill.

7. Could the rabbit make the goats go home?
11. Did Ned like the airplane ride?
1. Let us go into the hills and gather wild flowers.
3. Happy birthday to you!
9. We took turns riding on the horse.

Game 55. National Holidays

This is a picture of George Washington, the Father of our Country.

Keep in an envelope pictures representing our national holidays with names of people and stories that refer to each holiday. On the envelope print the following directions: "Match the stories and pictures by reading."

Game 56. Mixed Word Cards

Prepare two identical packs of about 30 cards with a printed word on one side of each card. Mix the two packs together and spread them face down on a large table. Taking turns, each child turns up two cards. If they happen to be similar and he can name them he may keep them. If dissimilar, he turns them down in the same place where he found them lying. Children become much excited over this game, for they carry in mind until their turns come again just where certain pairs are lying. The child holding the most cards when the board is cleared, wins.

Game 57. "Match"

This is a game much like flinch. Two children sitting opposite each other with identical decks of word cards shuffle their packs and place them, word-side down, in a pile before them. On a signal both players begin turning up the top card and placing it, word-side up, on a new pile. When cards with the same word printed on them are turned up at the same time, the first child to call out "Match," if he reads correctly the word on the card, may take the entire pile of his opponent's cards that have already been turned up. The child ending the game with all the cards in his possession wins.

Game 58. Naming Word Cards

A large pile of word cards is distributed among a small group of children sitting around a table or in a circle. Each child places his little pile of cards face down before him. Each child in turn places his top card, face up, in the center, naming it as he does so. If he fails to know his card or if he names it incorrectly he must place it at the bottom of his pack. The first child out of cards wins.

Game 59. A Magazine Picture Hunt

Use a magazine with many attractive pictures and advertisements. Inside the cover insert a page which reads as follows:

1. *Look for a picture of a child on a sled.*
2. *Find a picture of three girls at play.*
3. *Find the page that has the most animals on it.*

The child is provided with paper and pencil, and as he works number one he jots down the problem number and the page on which he finds the problem answered.

Game 60. The Word Ball

Draw a big chalk circle on the floor. The children sit around the outside of the circle. On the floor inside the circle scatter about twenty word cards. Children take turns at rolling a ball into the circle and trying to have it stop on a chosen word. If the ball stops on the word and the child can name it, he may have it. The child having the most cards at the end, wins.

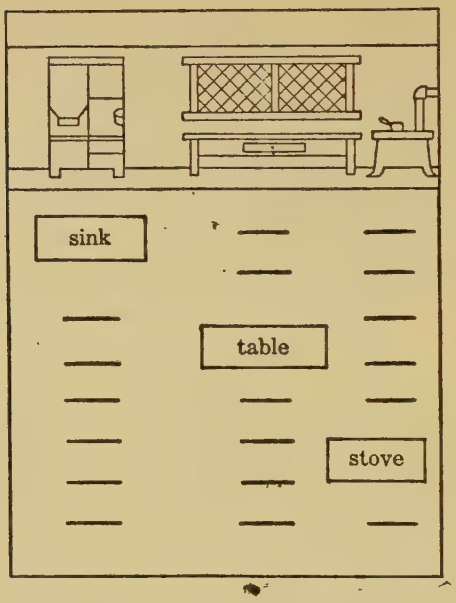
Game 61. Matching Stories and Pictures

Mount ten or twelve pictures upon large cards. Have short stories or sentences telling about the pictures printed on paper strips. Place all of this material in a large envelope with the following instructions on the outside: *See if you can match all the stories with the proper pictures.* The stories will be on this order:

Here is a picture of Alice. She is jumping rope.

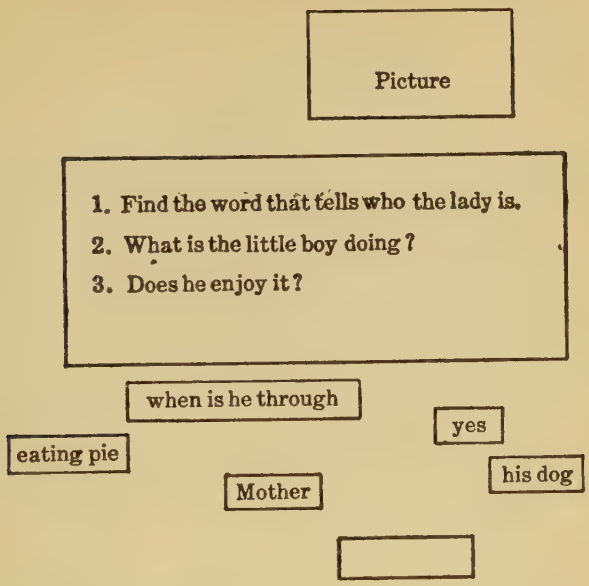
Do you like the game these boys are playing? It must be football.

Game 62. Furnishing a House



Place in a large envelope the four following pictures: dining-room, kitchen, bedroom, living-room. In the same envelope place many small slips bearing printed names of pieces of furniture and other things found in the different rooms. The child lays the pictures out on his table and then places the furnishings and objects in the proper rooms.

Game 63. Answering Question Cards



In an envelope place two or three attractive colored pictures. Accompanying each picture have a paper with instruction sentences, numbered, as for example:

1. *Find the word that tells who the lady is.*
2. *What is the little boy doing?*
3. *Does he enjoy it?*

Have words and phrases which answer the questions about each picture printed on small cards. After examining the picture carefully, the child places the question sheet before him and puts the proper answer beside each question.

CHAPTER XI

PRIMARY NUMBER WORK

Introduction: Aim of primary number work.

1. Psychology of primary number work — Variety of number-learning activities — The meaning of number — The child's pre-school number learning — Learning to count abstractly — Learning to count concretely — Cardinal and ordinal number concepts — Number concepts complex — Learning the Arabic figures — First concepts of the decimal system of notation — Summary of principles.
2. Method in primary number work — Relation of primary to later arithmetic work — Grading of number material — Object lessons in primary arithmetic — Associating number words and figures — Reading as a phase of number work — Habit-formation — The drill lesson — Overlearning — Excesses in notation learning — Incidental number learning — Regard for individual differences — Play motivation for number work — Incidental and systematic number learning.
3. Primary number games and devices — Forty games described.

Selected references.

Aim of primary number-work. The number-work in the first grade should give the child a sense of what numbers are for, that is, should offer him concrete number experiences which will give him correct concepts of the meaning of numbers. This is to prepare him for his manipulations with abstract figures later on.

The goal in primary number-work may best be stated in the requirements for the first year in one of the recent scientifically made courses of study, that of Los Angeles, California. Some slight changes have been made in the form; but this may be taken as a typical primary number program.

B–1 Requirements

Abilities

To count through 100 abstractly
To count through 20 concretely

To make groups of 2, 4, 3, 6 through 12 concretely
To write numbers up to 9 and read numbers through 50
To measure in feet and yards with rulers
To estimate lengths in feet, then verify

Other outcomes

The idea of one half of a unit
The idea of half of the equally divisible groups of 4, 6 and 8
To know time of even hours, of 9, 12, 1, 2; to make clock faces to show
To know 2 nickels make a dime
To know 5 pennies make a nickel
To know 10 pennies make a dime
To know all combinations of

1	2	3	4
1	1	1	1

To know cube, square, circle, dozen, concretely; to be able to make each
To know 2's in 8, in 4, in 6
To know combinations of

2	4	5	3
2	2	2	2

A–1 Requirements

Abilities

To develop the idea of subtraction as taking away
To write figures through two places from dictation
To add two-column figures without carrying
To write combinations through 10
To count by 2's, 5's, 10's
To add 1 to 10, to 11, to 12, to 13, etc.
To develop multiplication idea concretely
To develop units, tens, hundreds
To rationalize 0
To give abbreviation of quart, pint
To give $\frac{1}{2}$ of 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 100, 200
To give $\frac{1}{4}$ of 1, 4, 8, 12, 16, 20, 40, 60, 100, 400
To do short division through hundreds
To make graphs
To exhaust numbers of 25 to 40

To subtract numbers through 7 from numbers through 8
To comprehend $\frac{1}{2}$ foot, $\frac{1}{2}$ dozen
To find from graphs the highest, biggest, tallest, most, etc., also the shortest, smallest, least, etc.

Other outcomes

The fraction idea $\frac{1}{2} = \frac{2}{4}$
The idea of weight with sand, clay, etc.
To know plus and minus signs
To know own home number
To know the month, the day

1. Psychology of primary number work

Variety of number-learning activities. The learning of numbers involves a variety of mental activities on the part of the beginner, such as:

1. Getting a conception of the difference between one and more than one
2. Getting a conception of the difference between more and less
3. Getting a conception of the difference between a number in a series and a group total, i.e., between ordinal and cardinal numerals
4. Associating number names in sequence
5. Associating number concepts with word symbols
6. Associating number concepts and their word symbols with the digits, a set of secondary symbols
7. Associating counting of objects with the number sequence
8. Abstracting number concepts from concrete experiences, including a perception of quantity
9. Getting a conception of the general principles of the decimal notation
10. Making simple additive number combinations
11. Making simple subtractions
12. Making simple multiplications

This program would carry us beyond the field of primary number-work if we were to carry these topics through their

more advanced phases, but the relative task of the first year's work can be marked off quite clearly.

In order to see the primary-grade problem against the background of the number work which immediately follows, it may be well to add, in brief outline, the mental processes that are involved in the arithmetic course as a whole.

Thorndike[1] gives us the following as the main outline of the work of the elementary school in arithmetic:

(1) Working knowledge of the meanings of numbers as names for certain-sized collections; for certain relative magnitudes, the magnitude of unity being known; and for certain centers or nuclei of relations to other numbers.
(2) Working knowledge of the system of decimal notation.
(3) Working knowledge of the meanings of addition, subtraction, multiplication, and division.
(4) Working knowledge of the nature and relations of certain common measures.
(5) Working ability to add, subtract, multiply, and divide with integers, common and decimal fractions, and denominate numbers, all being real positive numbers.
(6) Working knowledge of words, symbols, diagrams, and the like as required by life's simpler arithmetical demands, or by economical preparation therefor.
(7) The ability to apply all the above as required by life's simpler arithmetical demands, or by economical preparation therefor, including certain specific abilities to solve problems concerning areas of rectangles, volumes of rectangular solids, per cents, interest, and certain other common occurrences in household, factory, and business life.

The meaning of numbers. The primary teacher should make a careful study of some of the psychological discussions that have been written as to the meaning of numbers,

[1] From *The Psychology of Arithmetic*, by Edward L. Thorndike, pp. 23–24. By permission of The Macmillan Company, publishers.

such as those of Thorndike,[1] Freeman,[2] Starch,[3] Howell,[4] and McLellan and Dewey.[5] These discussions cover the whole field of arithmetic. Detailed reproduction of such sections of these discussions as pertain to primary work would be out of place here. Some of the more important conclusions will serve our purpose.

Numbers principally have meanings as being *in a series;* or as convenient symbols for *collections* or *groups* of concrete objects; or as *ratios* related to one another, as, for example, in units of *measurement;* or as pure *abstractions* or a secondary set of symbols more convenient for various mathematical operations than the word ideas for which they stand. The last of these can best be understood when we compare our Arabic figure symbols with Roman numerals on the one hand and with algebraic symbols on the other.

Some study of this phase of the psychology of arithmetic in such references as have been given is especially important for the primary teacher, because these various theories as to the meaning of numbers have had quite important effects on methods in early number work. The practical conclusions drawn from such discussions will be included in the next general section of this chapter, dealing with methods.

The child's pre-school number learning. If we trace the development of the number learning activities, we find that the average child has already experienced several of

[1] Thorndike, Edward L.: *The Psychology of Arithmetic,* pp. 2–8.

[2] Freeman, Frank N.: *Psychology of the Common Branches,* pp. 177–97.

[3] Starch, Daniel: *Educational Psychology,* pp. 383–86. This book and Thorndike's give a number of references to experiments in the field of early number learning.

[4] Howell, H. B.: *A Fundamental Study in the Pedagogy of Arithmetic.* This book gives a summary of experiments by Lay and others on the development of number concepts, which are accessible only to those who read German.

[5] McLellan, J. A., and Dewey, J.: *Psychology of Number and its Applications to Methods of Teaching.*

these by the time he comes to school. He not only has acquired the conception of the difference between one and more than one, but also has an understanding of more and less, though not to a refined degree. Many children have also been taught by rote memory to associate some of the number names in sequence; that is, they can count to ten or twenty, or even farther.

Just what the average child knows about number ideas by the time he is five or six should be investigated. A few such studies have been made. The results of some of these have been summarized by Thorndike: [1]

In the Berlin inquiry of 1869, knowledge of the meaning of two, three, and four appeared in 74, 74, and 73 per cent of the children upon entrance to school. Some of those recorded as ignorant probably really knew, but failed to understand that they were expected to reply or were shy. Only 85 per cent were recorded as knowing their fathers' names. Seven eighths as many children knew the meanings of two, three, and four as knew their fathers' names. In a similar but more careful experiment with Boston children in September, 1880, Stanley Hall found that 92 per cent knew three, 83 per cent knew four, and 71.5 per cent knew five. Three was known about as well as the color red; four was known about as well as the color blue or yellow or green. Hartmann [1890] found that two thirds of the children entering school in Annaberg could count from one to ten. This is about as many as knew money, or the familiar objects of the town, or could repeat words spoken to them.

In the Stanford form of the Binet tests counting four pennies is given as an ability of the typical four-year-old. Counting thirteen pennies correctly in at least one out of two trials, and knowing three of the four coins — penny, nickel, dime, and quarter — are given as abilities of the typical six-year-old.

Ignorance of just what a child knows about number concepts has resulted in ridiculous extremes, in two directions

[1] From *The Psychology of Arithmetic*, by Edward L. Thorndike, pp. 200–02. By permission of the Macmillan Company, publishers.

— in making textbooks and in formulating courses of study. Thorndike, in making a study of arithmetics, preliminary to planning his own series, discovered some "reputable textbooks arranging to teach elaborately facts already sufficiently well known to over three quarters of the pupils when they enter school." He also found "other textbooks presupposing in their first fifty pages a knowledge of words which not half of the children can read even at the end of the 2B grade." [1] As examples of the gross errors to which ordinary ideas about the abilities of children at the beginning of school training in arithmetic lead, he finds "a reputable and in many ways admirable recent book has fourteen pages of exercises to teach the meaning of two, and the fact that one and one make two! As an example of the reverse error, consider putting all these words in the first twenty-five pages of a beginner's book: *absentees, attendance, blanks, continue, copy, during, examples, grouped, memorize, perfect, similar, splints, therefore, total.*" [2]

Learning to count abstractly. It has been already pointed out that the majority of children can count abstractly to ten when they enter school, and that such counting constitutes one of the abilities expected from a six-year-old child in an intelligence test. Learning to count abstractly to 100 is one of the common requirements of primary children in courses of study. In the list of number-learning activities counting was identified as the "association of number names in sequence." It is somewhat more and somewhat less than that, if the child learns to count beyond 20.

Counting may be a mere exercise of rote memory. The child may learn to say "two" after "one," "three" after

[1] From *The Psychology of Arithmetic*, by Edward L. Thorndike, p. 200. By permission of The Macmillan Company, publishers.

[2] *Ibid.*, p. 200.

"two," and so on, without having a concept of the numerical significance of these number words. He might as easily learn to count backwards, or learn any list of ten unrelated words or even ten nonsense syllables, as he might learn the names of the figures in order. Or he might learn these words by rote beyond the point where he has some concept of their numerical value. In fact, that is just what usually happens. Children, by the time they enter school, know the meaning of three or four, but can usually count to ten.

Such counting is called abstract counting. Concrete counting means the identification of corresponding numbers with groups of objects or pictures of them.

In counting abstractly beyond 13, the child will soon discover a repetition in the teens of the digit words in fourteen, possibly in fifteen, in sixteen, and so on. When he is counting on in the other decades, the repetition of the digit words will be more striking, and the principle of the number combinations will soon be reasoned out by the average child. This is what was meant by saying that learning to count beyond 20 is somewhat more and somewhat less than mere "association of the number names in sequence." It is no longer pure memory of the sequence of number names; it is partly that, plus the application of a general principle of sequence within each decade.

Learning to count concretely. The mental act of learning to count concretely has already been distinguished from abstract counting. It must also be distinguished from the perception of quantity, or of the number of objects in a group or of unit parts in a whole. This act involves the identification of each unit, one by one, in a collection or whole, with the successive number symbols previously learned by rote memory. Sometimes, at home, the memorizing of the number sequence is taught incidental to concrete counting; that is, the child is made to point to objects as he learns to count.

This simultaneous learning of abstract and concrete counting is, of course, unnecessary, and its value is probably questionable. It will surely limit or delay the abstract counting, usually because of the practical absence of a sufficient number of like objects to carry the count very far — if unlike objects are used for such counting there would be a chance of peculiarly confused associations. These same principles would hold if the abstract counting is to be learned in school.

Cardinal and ordinal number concepts. Another difficulty in connection with learning to count concretely is the confusion of the cardinal and ordinal numerals, that is of "four" with "fourth," "five" with "fifth," and so on. When the child is counting concretely he is almost invariably taught the cardinal numerals, when, as a matter of strict accuracy, such objects should be designated by the ordinal numerals — "This is the *first* penny, the *second*, *third*," and so on. We usually do not accompany this concrete counting with the association of correct number concepts. We do not say, "This is *one* penny; this and this are *two;* these and one more are *three.*" Such concrete counting should probably be done by grouping, rather than by pointing at objects in succession. The pointing may be permissible in the early stages of learning the number sequence. That stage, however, lies in the pre-school experience of most children. If any work in concrete counting is done with five- or six-year-olds, it would be better to have the grouping than the pointing method followed, giving the child the impression always that the cardinal numerals stand for the totals, and not for the position in a series.

Number concept a complex concept. Number concepts are, and should be taught as, complex concepts. "Four" is not merely to be thought of by the child as a name in an association sequence; as coming after "three" and before "five." Neither is it merely to be thought of as the name for four

objects in a group. These are the earliest concepts learned, but they must be combined together, and with other concepts as well. Arithmetical theorists have argued and built systems of number teaching on each of several possible fundamental number concepts. In addition to the two already named, some would argue that true number concept lies in recognizing ratio relationships, as for example that "four" is four 1's, two 2's, and so on, or four times as great a quantity as one, or twice as much as a unit quantity of two. Or this matter may be extended into relations or implications other than the mere ratio relation.

As Thorndike expresses this idea of number concept, "To know six in this sense is to know that it is more than five or four, less than seven or eight, twice three, three times two, the sum of five and one, or of four and two, or of three and three, two less than eight — that with four it makes ten, that it is half of twelve, and the like."[1] In other words, each number has possible implications quite beyond the sphere of primary number-learning. Well on in school, for example, the child will learn other startling relationships of six. When he takes up interest tables he finds that six per cent, as a rate of interest, has peculiar relations to the twelve-month period of computing interest. Later still he gets mechanical and æsthetic satisfaction out of the relationships of the six chords, equal to the radius, that divide the circumference of a circle.

Out of this complexity of number concepts attempts have been made to establish systems of early number teaching based exclusively on any one of these phases of the complex concept. Some have advocated the series idea as the best exclusive starting-point, some the grouping idea, some the ratio concept, and others the relational. The later writers advocate a combination of these methods of approach,

[1] From *The Psychology of Arithmetic*, by Edward L. Thorndike, p. 8. By permission of The Macmillan Company, publishers.

and argue against the exclusive use of any single method. Freeman refers to "the two forms of experience which are commonly used to carry the child beyond the counting stage" as "measurements of length or of area or of cubic contents; and grouped objects, as marbles or balls or sticks." He declares that "both methods may be used in combination to advantage," and that "it is not necessary that we choose either to the exclusion of the other. Each has its own advantages, and one may very well be made to supplement the other."[1]

Thorndike argues similarly.

> It is obvious that all four meanings have claims upon the attention of the elementary school. . . . To know the meaning of a number means to know somewhat about it in all of these respects. The difficulty has been the narrow vision of the extremists. A child must not be left interminably counting; in fact the one-more-ness of the number series can almost be had as a by-product. A child must not be restricted to exercises with collections . . . when work with measurement of continuous quantities with varying units — inches, feet, yards, glassfuls, pints, quarts, seconds, minutes, hours, and the like — is so easy and so significant.[2] On the other hand, the elaboration of artificial problems with fictitious units of measure, just to have relative magnitudes . . . is a wasteful sacrifice. Similarly, special drills emphasizing the fact that eighteen is eleven and seven, twelve and six, three less than twenty-one, and the like, are simply idolatrous.[3]

Learning the Arabic figures. While the child is learning much of his early concept of number, he is learning about numbers in terms of word names, usually by ear. He may, at the same time, in learning to read get the visual symbols of the words, such as "one," "two," "four," "ten." He may

[1] Freeman, F. N.: *Psychology of the Common Branches*, p. 193.

[2] The primary teacher must not lose sight of the fact that he is arguing the matter for a more extended period here than the first grade.

[3] From *The Psychology of Arithmetic*, by Edward L. Thorndike, pp. 6 to 8. By permission of The Macmillan Company, publishers.

also learn the Arabic figures as a secondary set of symbols, which the race has evolved and adopted because of their convenience for use in the number operations. This learning of figures is based on, and soon becomes associated with, all that the child has learned and continues to learn about the meaning of the numbers.

No attempt should be made to teach the child the abstract figures before he has fairly clear number concepts to associate with each of the digits from 1 to 10. This is analogous to the principle to be applied a little further on in the arithmetic work. We have other secondary symbols besides the figures, such as +, −, =, and others. These stand not only for the words "plus," "minus," "equals," etc., but also for the processes implied. The general understanding of the processes should precede the presentation of them in terms of figures and process signs. This must not be understood to imply that the child must fully understand or comprehend before he learns to perform certain operations, or before he is drilled to fix some of the combinations — as in addition and multiplication tables — as habit associations. This principle, of course, applies more especially to arithmetic work beyond the primary grade, and must not be developed here more fully.[1] If opportunity is given for individual attention in primary instruction, some application of the principle may be necessary in dealing with the work done by the brighter children.

As soon as the average child has reached the stage where he has connected his number meanings with the digits, 1 to 9, and understands the meaning of 0, he is really at the threshold of formal arithmetic and is ready for the next two steps: (1) Performing the first simple operations in the ma-

[1] For the teacher interested in this problem a convenient brief discussion may be found in Frank N. Freeman's *Psychology of the Common Branches*, pp. 196–201.

nipulations of figures by addition, and (2) Getting a conception of the decimal system of notation.

The former of these, the work in simple addition, will include the number combinations through 5 plus 5.

First concepts of the decimal system. First in abstract counting, later in associating number ideas with number names and figures, the primary child gets beyond the range of the first group of ten in our decimal system. First, he discovers the general rule of repetition and modification within, and for, the successive decades. Later, usually beyond the primary grade, he discovers further significance in this grouping of our numbers in this decimal system. The practical reasons for and against the decimal system of notation present some interesting problems, but the problems are in connection with the development of number ideas in the race rather than in the child.[1]

One of the reasons for this repetition of decimal groups in number systems has psychological implications. Adults probably developed the grouping because of "our inability to comprehend more than a small number of ungrouped objects." [2] This ability is, of course, still more limited in the child than in the adult. Later, beyond the primary grade, the child will have to learn the relationships of the tens to the units, and then of the hundreds to the tens, and so on, as development proceeds, especially in the form of figures, so as to use these conventional relations in performing the fundamental processes of arithmetic.

Summary of principles. We may now summarize the general conclusions to be drawn from our discussion of the psychology and methods of primary number work.

[1] The reader who is interested in this problem can find a good brief discussion in Frank N. Freeman's *Psychology of the Common Branches*, pp. 185–95.

[2] Freeman, Frank N.: *Op. cit.*, p. 188.

1. The child comes to school with some of his number experience already developed. The child entering the first grade, indeed, usually knows more about number than is commonly supposed.
2. Learning the number names in sequence may be carried on independently of a conception of their meaning, and probably should precede that development, step by step.
3. Number concept is a complex concept. The primary child has to go through a variety of number learning experiences to get sufficient number concepts to use them in the arithmetical processes. These experiences must include:
   a. The concept of numbers in a series, first by verbal names, then in figure symbols.
   b. A concept of concrete as well as abstract counting, involving the distinction between numbers in a series and numbers as symbols for group totals. This implies learning numbers as cardinals rather than as ordinals.
   c. The concept of ratio and other relationships, especially as units of measurement, or the perception of relative quantities.
4. The child must get a conception of our decimal system of notation.
5. This preliminary experience is to be followed in the primary grade by very simple beginnings with the arithmetical operations, perhaps only the simplest work in addition and multiplication combinations.
6. Perhaps much more could be done in number work in the primary grade than is now commonly attempted, but there is no particular object in hurrying the child into advanced number work.
7. Some of the number work in the primary grade may take on the nature of drill work with numbers, regardless of incomplete understanding.
8. There is a considerable range in individual differences in number knowledge, both in the pupils' pre-school attainments and in their progress during the first year.
9. A careful inventory of these individual differences should be made, both at the beginning and at the end of the first grade. This points out the need of developing special tests for these purposes.

2. Method in primary number work

Relation of primary to later arithmetic work. Arithmetic is still considered one of the most important studies of the elementary grades. In general, teachers and administrators would place it with reading in the place of chief importance, with considerable disagreement as to which of the two is more important. Not so very long ago arithmetic no doubt had the lead over reading or any other elementary subject. Pupils were graded by progress in arithmetic more than by progress in reading. This was perhaps largely due to the fact that the subject-matter of arithmetic was capable of being graded with much accuracy, and because the stage of proficiency could be determined more definitely and objectively than in reading. The practical importance of the subject in all commercial and industrial activities also contributed to this high valuation set on arithmetic.

In recent years, however, a number of factors have cooperated to change this relationship of reading and arithmetic. By the invention of comptometers, adding machines, and other mechanical office devices, proficiency in arithmetic has lost much of its practical importance. By the development of standardized tests in reading, it is now possible to grade a pupil as easily and as accurately in reading rate and comprehension as can be done in arithmetic, even with the development of similar devices which make gradings more accurate in that subject as well. While arithmetic has declined in practical importance, reading has been shown to be of constantly increasing practical value, not only as the principal tool subject in school work but also in real life. Indeed, it does not take a great stretch of the imagination to see that arithmetic may lose even more of its importance as a school subject. The perfection of a simple, cheap comptometer that could be carried in one's pocket might make most of the weary hours of drill on tables and number combina-

tions quite unnecessary, even for the present generation of school children.

As the subject of arithmetic is now taught, and as it will continue to be taught until some such mechanism revolutionizes our problem, the subject of arithmetic, so far as the problems of method and curriculum are concerned, may be said to comprise three distinct phases:

1. An understanding of the meaning of number, and of its symbolical representation in the Arabic and decimal system.
2. Skill in the manipulation of these figures in the four fundamental processes — addition, subtraction, multiplication, and division.
3. Ability to apply these operations to problems, especially to problems involving denominate numbers, in terms of the conventional relations given in the various denominate tables.

Number work in the primary grade involves only a part of the first of these three phases.

Grading of number material. The primary-grade number work is affected by the fact that the whole elementary course in arithmetic must be wisely graded, with certain topics and processes carefully distributed in such a way as to get the work on each grade to lead sensibly on to that of the next. In this scheme of grading, the number work of the primary grade is only slightly affected. The only principle that need be kept in mind is to see that primary number work is sufficiently easy and that it shall consist of only so much of the simplest first steps as can be handled easily by the average child. Many writers, in fact, have urged that all formal arithmetic might well be omitted during the first year, and that the sort of work suggested in this chapter might better be left for the second grade, and the first textbook put off until the third year. In connection with such a theory of the arithmetic curriculum it is claimed that children who make the later start lose nothing

in the end, and that the greater maturity of the child makes it easier to grasp the fundamentals more readily.

Thorndike gives several important principles as to the content of primary number work. The child entering the first grade usually knows more about number than is commonly supposed.[1] Further, it is maintained that, so far as the child's ability is concerned, much more can be done than is now usually attempted.[2] At the same time Thorndike declares that there is no particular object in hurrying the child into advanced number work. In general, he concludes:[3]

> It seems probable that little is gained by using any of the child's time for arithmetic before grade 2, though there are many arithmetical facts that he can learn in grade 1. Postponement of systematic work in arithmetic to grade 3 or even grade 4 is allowable, if better things are offered. With proper textbooks and oral and written exercises, however, a child in grades 2 and 3 can spend time profitably on arithmetical work. When all children can be held in school through the eighth grade, it does not much matter whether arithmetic is begun early or late. If, however, many children are to leave in grades 5 and 6, as now, we may think it wise to provide somehow that certain minima of arithmetical ability be given them.

Whatever may be our opinion of this problem, we have to face the condition that prevails most commonly in the public schools. If such work is assigned to the first grade, the teacher must realize the important relation of these first steps to the later work, and must prepare the child as thoroughly as possible in the beginnings of number. The complex problems of later grades can be met successfully only if every preliminary element has been well understood, and if the necessary skills have become thoroughly automatic.

Object lessons in primary arithmetic. The general signif-

[1] From *The Psychology of Arithmetic*, by Edward L. Thorndike, pp. 199–202; 205–08. By permission of The Macmillan Company, publishers.
[2] *Ibid.*, pp. 195 f. [3] *Ibid.*, p. 198.

icance and technique of object lesson teaching was taken up in Chapter VIII. This method finds one of its effective uses in the primary grade in teaching the meaning of number, and in developing the first steps in the simpler phases of addition, subtraction, and multiplication processes that may be taken up in the first year's number work. Some of the games and devices described in Part 3 of this chapter employ concrete experience with objects. Considerable object-lesson learning of numbers will also be supplied incidentally in some of the other activities of the program, as in finding the designated page in the primer; in the play with blocks; in measuring, especially in some of the construction work; in the handling of paper money, in such activity as playing store; and in scoring in some of the games, such as dominoes, bean bag, or ring toss. By concrete experiences with real objects the child is also best taught some of the simpler measure values such as the smaller coins, inches and feet, pints and quarts, hours and minutes, and day, week and month on the calendar.

Associating number words and figures. The primary child will get his first lessons in learning the Arabic figures, and in a later grade usually his Roman numerals, in much the same way that he learns his first steps in reading. The figures we use for number ideas are like abbreviations or convenient secondary symbols for words, just as words written or printed are symbols for word sounds. The figures 5 and 8 have the same sound equivalent as the printed symbols five and eight. The figures have to be associated with the corresponding sounds, just as the printed words are associated with them. The association of the figures also has to be made with the corresponding printed and written words. For the whole cluster of associated symbols content has to be developed in the related idea by concrete experiences, in order that the child's range of abstract num-

bers, which he learns first in his counting, may be given meanings. The reading of simpler numbers — those below 5 or 6 — does not require this process, the correct concept of number values to that extent being known when the children enter school. Beyond this point, however, the several processes involved are more or less simultaneous, and no definite program or order of instruction can be prescribed.

We may say, then, that in the primary work a child should, by concrete experience with objects, get the meaning of 10 or 12 either before or as he learns the words and figures, but when we get beyond 20 or 30, whether these numbers are dealt with in the first or second year of school, we cannot be so dogmatic about the sequence. In his abstract counting we let the child go on to 100, or even higher, before his idea of 10 or 12 is clear. We have him use the numbers in their sequence relations before a quantitative concept can be grasped. He finds page 28 in his primer, though his concept of that number is as hazy as his idea of 58 or 128. As adults, even, we deal with large numbers in a variety of ways without adequate concepts of their quantitative values.

Another step in the learning of figures is dealing with decades above ten. Combinations of the successive units are made for each decade by a system quite analogous to that which the child uses to progress in his abstract oral counting at an earlier stage. The relationship between numbers in the units column with numbers in the tens column, and between the tens and hundreds, is a development of the few years after the primary grade, in connection with the manipulation of numbers in the decimal relationships that must be observed in performing the four fundamental processes. The conclusion is apparent, therefore, that in teaching children in the primary grades to associate the Arabic figures with the related visual or spoken words,

the teaching of meanings is not essentially involved except for the first decade, and possibly to some extent for the second.

Reading as a phase of number work. It has already been intimated in the preceding sections that to some extent the learning of number is partly a reading process. The full significance of this cannot be illustrated on the level of primary grade work, but it is evident even here that an adequate teaching of number concepts involves the child's ability to recognize and associate meanings with words expressing numbers. Also, he must learn to read some of the terms of measurement, such as *inch*, *foot*, *pint*, *quart*, *hour*, *minute*, *day*, and the like. Before the first year's work is over he may have to learn to read such arithmetical process words as *add*, *plus*, *subtract*, *times*, and possibly a few others. All this reading vocabulary ultimately contributes to his work in that phase of arithmetic which we call problem-solving, a phase that is being emphasized more and more in the newer textbooks. Recently, writers on arithmetic have begun to claim, some on the basis of experimental studies, that success in problem-solving in the advanced grades depends more on general intelligence and reading ability than it does on practice or experience in problem-solving. If this claim is substantiated by further controlled experimentation, it may result in a radical revision of the content of upper-grade arithmetic on the one hand, and on the other hand in a larger emphasis on intelligent reading of arithmetical terms as well as a clearer teaching of the vocabulary of arithmetic, from the primary grade up.

Number skills and drill. The general psychology and technique of skill drills was taken up in Chapter VIII. The place of such drill in primary number work must be pointed out here. The items for skill training in the first year in arithmetic are limited in number, but the importance of

learning some of these elements as skills, and the learning of them by well-motivated drills, is being slighted by those modernists who would subordinate the primary number work to the various projects and activities. One great objection to the programs that treat the learning of number altogether as an incidental matter lies in the difficulties that children are sure to meet as they advance into the upper grades, where teachers assume that certain experiences have been practiced to the point of being automatic. Such complete learning cannot be expected unless the specific bonds are made in a systematic and progressive way. It is reasonable for a second-grade teacher to assume that children coming to her can do automatically most, if not all, of the following things:

1. Count abstractly to 100.
2. Count concretely to 20.
3. Make all of the addition combinations whose sum is less than ten.
4. Identify some of the common units of measure that have been listed several times in the preceding sections of this chapter.
5. Find any page in the reader.
6. Read any number up to 100.
7. In some cases, where textbooks or courses of study prescribe it, the first-grade graduate is expected to be able to give some of the simpler multiplication combinations.

All of these items are skills. They are the product of frequent repetitions. They can be learned best by systematic drill, and must be learned to the point of immediate response. The above list does not include the child's having a complete concept of number, but any of these processes are quite capable of being made automatic, even if the child's conception of some of them is still quite limited. Each of the learning units may be compared to the memorization of a poem. Reciting the addition combinations may have no more meaning to some children than does their recitation

of "My country, 'tis of thee," or of "Now I lay me down to sleep."

Overlearning. In connection with such skill drills the principle of overlearning has been shown to be of the greatest significance. What is just learned in the way of memorization soon slips away. On the other hand, experimentation by psychologists on a great variety of skill and memorization materials has shown that an extra investment of time, a few repetitions beyond the learning-point, pay bigger dividends in the way of permanent retention than all the time given to the first learning. The forgetting curve has been shown to fall more during the first day than during the next month.

This emphasizes not only the value of a wise measure of overlearning, but also the great efficiency of early and occasional reviews after the first learning. In discussing the amount and distribution of practice in drill work, Thorndike declares that it is the "underlearning" of the hard bonds, rather than any overlearning of the easy bonds, which is the chief defect in arithmetic courses where drill is not properly distributed.

Excesses in notation learning. In some text books and courses of study, especially of the older type, the materials in number work are arranged on a logical basis rather than on a psychological one. If number work is started with such books, the whole topic of notation and numeration is exhausted before the first steps in other processes are begun. In such cases children are required to read and write numbers running to six or seven places. The items outlined in the preceding section indicate that two-place numbers are quite sufficient for primary-grade work. If teachers find such excesses in notation exercises outlined for beginners, they should skip them, or at best treat them very superficially.

Incidental number learning. It has already been made clear that, aside from the half-dozen skill items given in an earlier section, much of the number work in the primary grade may be made incidental to other activities. This is especially true of the phase of number meaning, or number concept building. How these concepts are gained may be seen by enumerating some of the natural activities in the schoolroom and at home from which number meanings are gained, and in which they are applied. The child, for example, is asked to count the chairs needed, or books, or sheets of paper for distribution; real or toy money is counted out; scores are kept in games; garden seeds are counted and grouped; the figures on rulers, clocks, houses, and the calendar are noted; pennies, nickels, and dimes are evaluated relatively in the child's saving or spending. Some of the newer literature, which puts an emphasis on activity and incidental learning, has valuable suggestion along this line.[1]

Regard for individual differences. Both in connection with the elements that have been enumerated as calling for drill work in the primary grade, and also in the incidental teaching of number meanings, the primary teacher must have some regard for individual differences in ability. Exceptional children, with their interest and curiosity aroused in number work, may be allowed to go beyond the limits usually set for the average in the course of study. Such pupils will profit later if they are allowed to develop some skill with the number combinations beyond 5 plus 5, or if they are allowed to cover a part of the multiplication table. In some of the problems of practical measurement, the relation of various pieces of money, telling exact time to the minute, and other experiences of this sort, may be developed with some of these children if the play or work situation calls for it naturally. In the chapter on testing and classification,

[1] See list of references on page 190.

the importance and the method of discovering these children, as well as those below the average, were fully explained. The results of such a grading of ability can have special values in increasing or lightening the number work.

Further, the individual difficulties of children of equal ability in dealing with some of the number combinations of arithmetic are quite as striking as the individual difficulties that we find in spelling later in the grades. The diagnostic tests in arithmetic sometimes reveal such peculiarities as children's being able to make accurately and readily any of the combinations with 7's or 8's, and being inaccurate or hesitant about combinations with 1's and 0's. One child may have trouble with 3 plus 4, but know 4 plus 3 perfectly; another child's difficulty may be just the reverse. In distributing drill responses the alert teacher will note such individual differences, and will adjust learning opportunities to meet them.

Play motivation for number work. In such incidental learning the element of play is often prominent, but play may be introduced just as effectively in connection with the more systematic drill work advocated in an earlier section. Drill work need not be carried on in the spirit of drudgery, with mechanical matter-of-fact repetitions. The insistence on drill practice is not opposed to the interest appeal or to motivation. To show how extensively this may be developed in number work a considerable section following is given over to a number of concrete suggestions for game and play devices; these should be helpful to the teacher in getting results with the more formal systematic phases of number work.

3. Primary number games and devices

In this section a number of games and devices for the teaching of number work are described in detail. The list

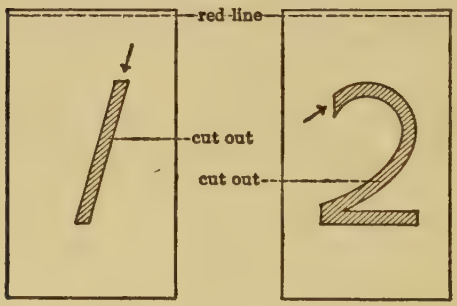
includes only such material as has been found of practical value by actual use.

It is suggested that large envelopes be provided for the number games, that the games be arranged in the order of their difficulty, numbered accordingly, and placed in a file box for use.

On the outside of each envelope print simple directions for playing the games.

Also prepare a wall graph upon which the children may record the number of the games which they have successfully completed.

Game 1. Blackboard Number Stencils

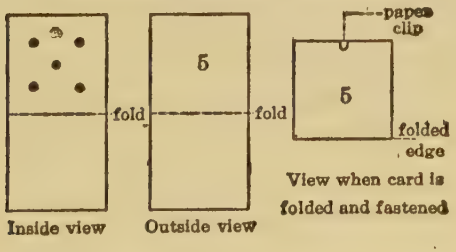


Prepare a set of 9×12 inches stencil cards. In the center of each cut out a number in stencil, making the numbers 3 or 4 inches high. Have the cards range from 1 to 9 inclusive. Draw a red line at the top of the card so the children can identify it as the top, and use arrows to indicate the starting-point and direction. The stencils are taken to the blackboard and used in learning to write the figures correctly.

Game 2. Puzzle Cards

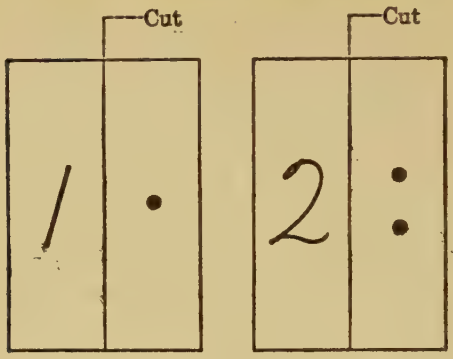
Prepare a set of puzzle cards for the numbers up to ten. Make the cards round and cut each one in halves, using an irregular line, so that no two cards are cut alike. On one half of each card place a number, and on the other half place the corresponding number of dots. The object of the game is to match the two halves. Later the child learns to identify the figures with the correct number of dots.

Game 3. Hidden Numbers



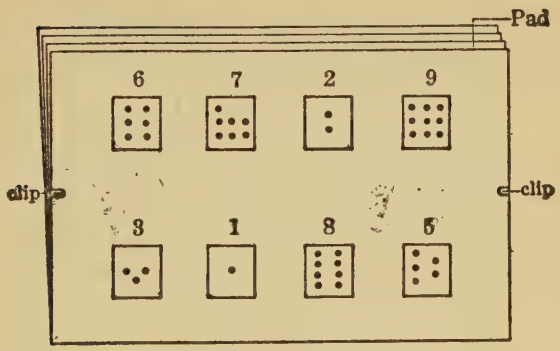
Prepare ten or more folded cards, as in the illustration. This game most naturally follows game number 2, and prepares for the playing of game number 4. The object is to read the figures without unfastening the clip and counting the numbers, but when the child is in doubt, opening the card is the way to prove the problem.

Game 4. Harder Number Puzzles



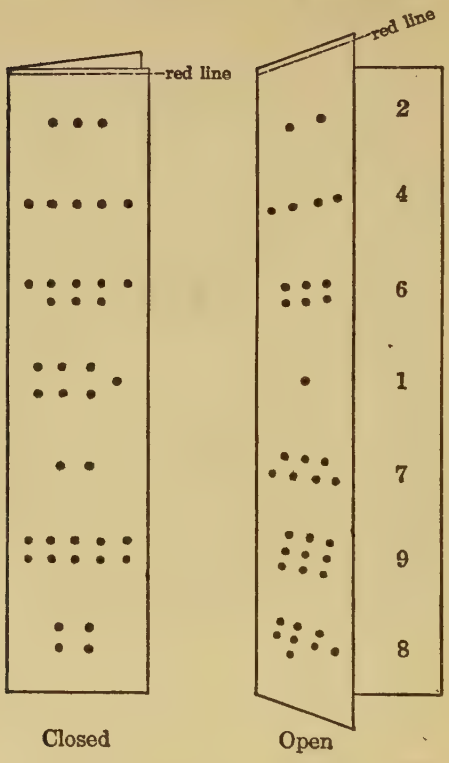
Make a set of puzzle cards similar to those used in game number 2, only this time make the cards rectangular and cut each card exactly through the center. The game is played like game number 2, but represents a step in advance. Unless the figures are comprehended this game cannot be played. If a child misses on a number in this game, have him check it on the same number of the simpler number 2 game.

Game 5. Number Windows



Make a stiff card as illustrated, the same size as the scratch paper you commonly use, with printed numbers under which holes, about one inch square, have been cut out. The card is then placed over a pad of scratch paper and fastened in place. The child choosing the game makes the proper number of marks or dots on the pad, through the hole to correspond to the number above.

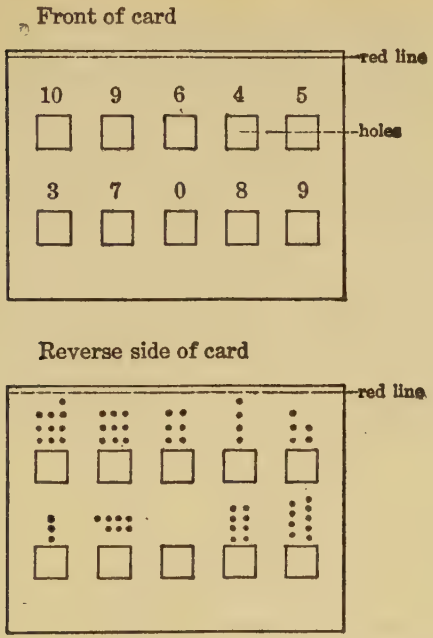
Game 6. Blackboard Number Folders



Make a set of long folded cards, as shown in the illustration, about 12 × 15 inches. On the outside place groups of dots. On the inside, under each group of dots, place the corresponding number. At the top of the card draw a red line indicating the top.

The child carries his card to the board, and, holding it closed, writes the correct number beside each group of dots. Then he opens it and checks his results.

Game 7. Self-Testing Number Stencils

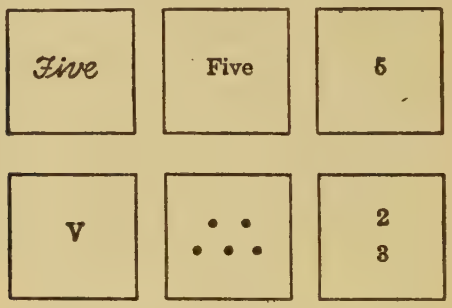


Print numbers on one side of a stiff card, the size of scratch paper to be used. Cut square holes under the numbers. Above these holes, on the reverse side of the card, place dots corresponding in number to the figure on the front of the card. At the top of the card draw a red line indicating to the beginner that it represents the top of the sheet. The child places a sheet of paper under the card, and in the space under each number marks with pencil or crayon the correct number of dots. Then he turns the card over and checks by the dots on the reverse side of the card.

Game 8. Number Matching Game

Make cards 3 × 6 inches upon which are printed numbers from 1 to 10. Several sets of cards are required, according to the number of players. Shuffle and deal the cards, 6 or 8 to each player and to the floor. The first player matches a card with one on the floor, placing the "book" before him and naming the card matched. If he cannot match a card he says, "I pass," and lays a card in the center. The child making the most books wins.

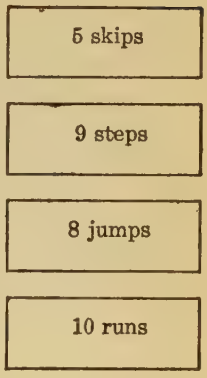
Game 9. Number Groups — Class Exercise



Prepare enough cards for the entire class, with all the numbers up to ten expressed in as many ways as possible — written and in figures, dots, and dashes. To play the game pass each pupil one card. Choose one pupil to go to the front of the class and show her card. All pupils with the same number in any other form go to the front and stand by the first pupil, showing their cards to the class. The class acts as judge. The first pupil chosen then chooses another pupil in the class to go to the front and have his number matched. And so the game proceeds.

Game 10. Activity Flash Cards

Prepare a pack of cards sufficiently large to be easily seen across the room. On one side of each card write a number and word designating some action. As, for example, 7 hops. A leader stands on a chair in a conspicuous part of the room or yard, the other children group themselves about anywhere and on a signal begin following the directions given by the leader. Anyone failing to interpret directions correctly is retired from the game. The children remaining longest in the game win.



Game 11. Floor-Dominoes

Prepare cards 3×8 inches in imitation of dominoes. Seat the children on the floor in a big circle. Give a card to each child. The child holding the double six plays first, placing his card on the floor in the center of the circle, and the game proceeds much as in a domino game, only that all of the children may play, each plays but once, and no score is kept. When the game is in play, no one is permitted to tell another of a chance to lay down his card. After all the cards are played, the teacher calls them in by asking each child in turn to bring her "A four and four equals eight," etc.

Game 12. Number Jumps

Dye, in pretty colors, as many sets of six button molds as there are children to play the game. Each child provides himself with six molds of the same color. A chalk circle 24 inches in diameter is drawn on the floor, and a small box or cup is placed in the center. The children arrange their molds along the chalk line in front of them, reserving one as a shooter. Playing in turn, they try to shoot a mold into the cup by pressing the shooter down on the edge of the mold, causing it to jump. Each mold in the cup counts ten points for the player.

Game 13. Straw Pile

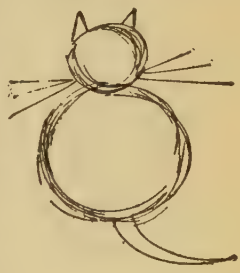
This game is similar to the old-fashioned jackstraws. Dye toothpicks different colors for straws. Use for the pick any stick or metal pin twice as long as a toothpick. Place the straws in a heap in the center of the table. Each player, provided with a pick, tries in turn to extract a straw from the pile without moving any other straw. If he moves another straw, the play goes to the next player. If he succeeds in freeing a straw he scores as follows:

Red	counts 7 points
Blue	6
Green	5
Yellow	4
Orange	3
Purple	2
Black	1

The children keep their own scores. The child with the highest score wins.

Game 14. "Meow"

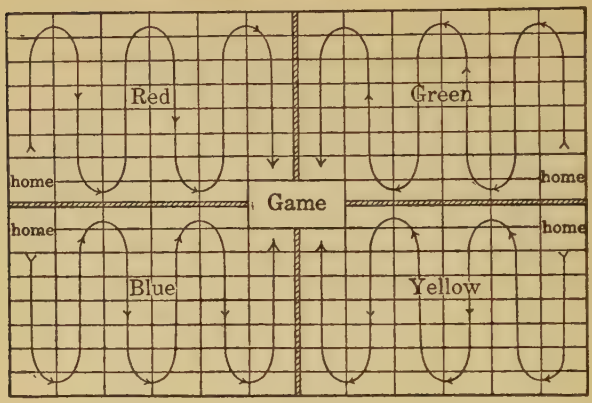
This game is called "Meow." It is played with a clock dial, paper, and a pencil, and by any number of children. The object of the game is to see who gets "meow" first, in other words, who gets his cat drawn first. The game stops with the first "meow," and all the players add up their points. Each player has a piece of scratch paper and a pencil. In order, the players spin the dial. No player can begin to draw until the dial hand stops at 1 which enables him to draw the body. After drawing the body, his aim will be to dial 2, or 5 at his next turn, so that he can put the head or tail on the body. And after that he will wish to dial 3 for the ears or 4 for the whiskers so that he can finish his cat. The faster the game is played the more fun there is in it.



Game 15. The Cafeteria Game

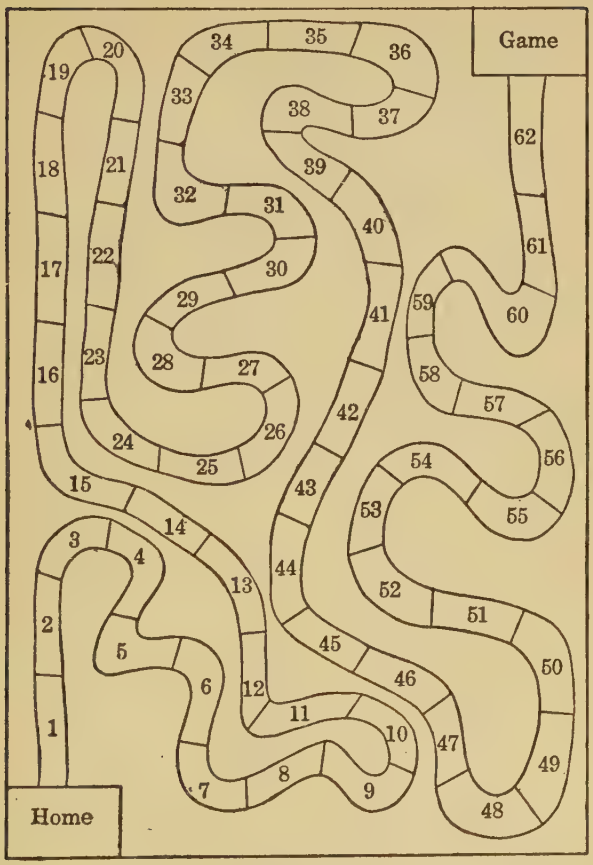
The children always enjoy playing the cafeteria game. It is one in which the entire room may participate. The teacher prepares a series of wall charts. One chart contains colored pictures of breads, another of drinks, another of vegetables, another of meats, another of salads, and still another of desserts. There is a checker and a cashier. As each child in turn chooses his meal, the class orally or silently adds up the cost and dramatizes the payment by counting or clapping out the sum.

Game 16. Around the Block



Make a game board, as shown in the illustration, and also a clock face. As many as four children at one time may play this game. Each chooses a bead, which he places on his home square. In turn they spin the clock and take as many steps from home in the direction of "game" as the clock dial indicates. The first one getting to "game" wins.

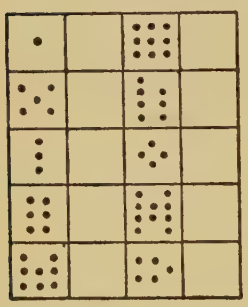
Game 17. The Winding Number Road

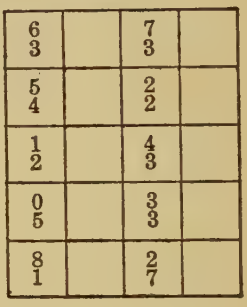


Make a cardboard playing board similar to the illustration. Provide as many beads of different colors as there are children playing the game. Have a box of slips of paper with little problems written on them, as follows: "go up 3," "go back 1," "stand still," "go up 9," etc. These pro-

blem slips are shuffled and turned face down in the box. Each player in turn draws slips and follows the directions, moving his bead along the road from "home" to "game." The first player reaching "game" wins.

GAME 18. PROBLEM SQUARES

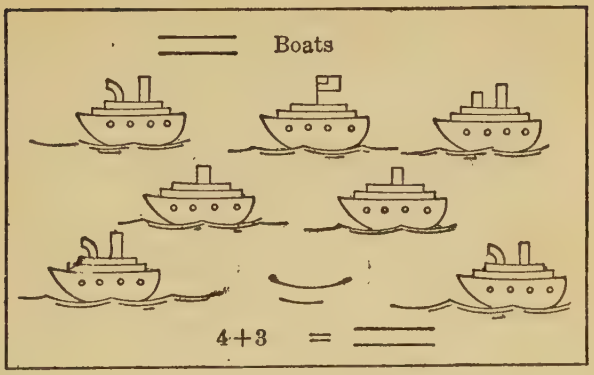




Make a board similar to the one in the illustration. Make two duplicate packs of number cards like those shown in the illustration. Two children compete in this game. They first shuffle their cards, then at a given signal both begin by putting the cards into the proper spaces. If one player has already put a card in a space another player may not put one there. When all the spaces are filled the child with the most cards placed correctly on the board wins.

The same game may be made more difficult by placing number combinations on the playing board and corresponding answers on the cards, as shown in the board at the right.

Game 19. Number Pictures

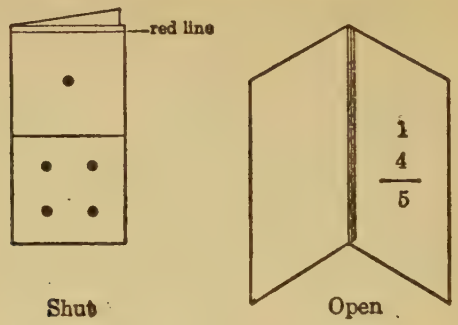


This game is composed of a series of pages. Each page has several similar objects painted on it in groups. At the top of the page, in front of the word which names the picture, is a double slit. At the bottom of the page is a number combination equal to the number of objects in the picture, with a double slit after it. In an envelope accompanying the pages are cards with numbers to fit into the slits. The object of the game is to find the proper numbers to fit into the two slits.

Game 20. Colored Dominoes

Make large cardboard dominoes each 4×8 inches. For the dots, paste on colored parquetry circles. The children may use these dominoes on the floor for games, or take them to the board and write the correct sum under each domino combination.

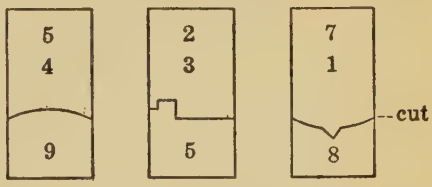
Game 21. Blackboard Number Stories



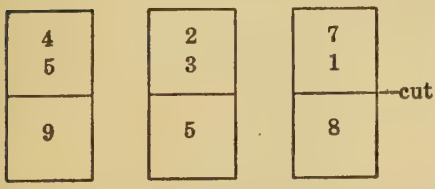
Prepare a set of booklets similar to those in the illustration. Along the top of the cover place a red line to designate the top. The child takes the pack to the board and writes as many number "stories" as he can (as shown in the open book). When he is through, he opens the booklets and checks his results.

Game 22. Addition Puzzle Cards

Make cardboard problem cards about 4 × 6 inches with answers below the problems. Cut the answers from the problem with an irregular line. Be sure that no two cards are cut alike. Mix the answer and problem cards all well together. It becomes the child's problem to place them back together properly. If he does not know the answer the shape of the cut will enable him to locate it. After he has put the puzzles together correctly, he may pick up all the problem cards, carry them to the board and see if he can write the correct answers beneath them. If he has trouble, he may go back to the table and receive help from the answer card that fits his problem card.

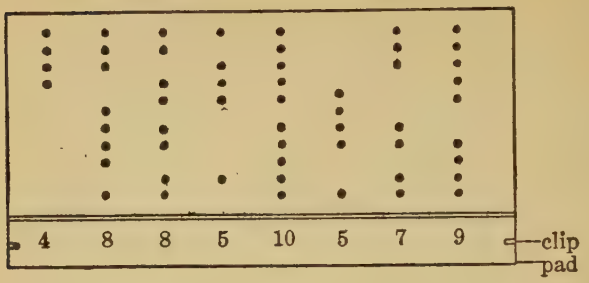


Game 23. Harder Puzzles



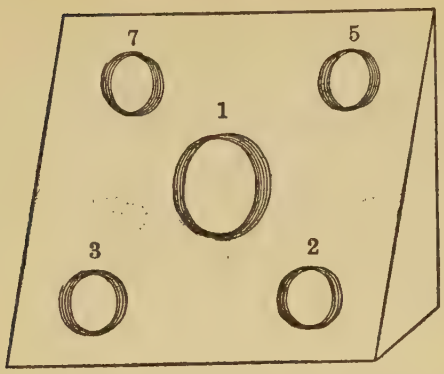
This puzzle is very like the one listed above except that it is harder, in that all the cards are cut straight through the center, giving no clues. If the child has trouble solving this, he may go back to the easier one for practice and drill.

Game 24. Counting Pad



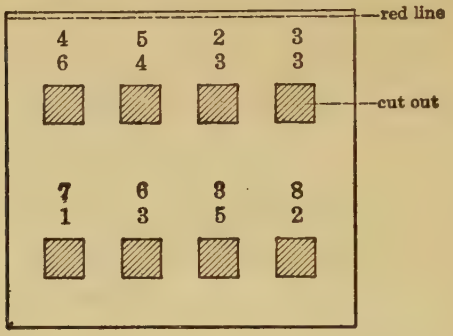
Prepare a cardboard with dots painted on it as in the illustration. At the foot of the card attach with clips a pad of scratch paper. The child takes this card and a pencil to his seat. He counts each column of dots and then writes the answer in figures under the column. When he has finished, he checks his work with an answer card. Then, when all through, he slips out the top sheet on the pad which he has used, leaving the game material clean and ready for the next player.

Game 25. Bean Bag



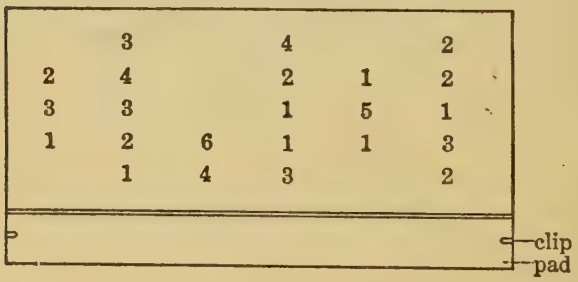
A piece of cardboard 9 by 12 inches has five circular holes cut out of it, the center one being larger than the other four. Above each circle is a printed number. To this cardboard is hinged another card of equal size, to make it stand alone. The children playing the game stand behind a line drawn on the floor at a point about six feet in front of the place where the game is set up. In turn they try to throw bean bags or balls through the holes, recording their scores on the blackboard when successful. At the conclusion of the game they add up their scores; the result determines the winner.

Game 26. Combination Stencils



Make a set of cards with number combinations written above square holes. Through the holes the answers to the problems are to be written on a scratch pad which is placed underneath. On the reverse side of the card write the answers in reverse order, so that the child can check his own results.

Game 27. Addition Pads

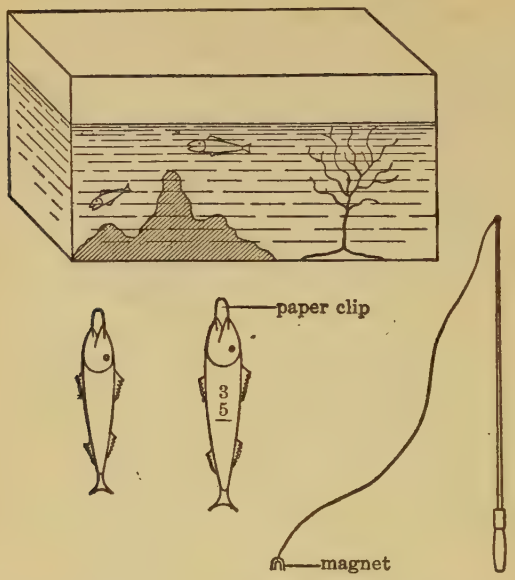


Prepare as you prepared number 24, but in place of dots, use simple number combinations or addition problems.

Game 28. Number Spell-Down

Number combination cards are used in this game, which closely resembles the old spelling match. The children form in two sides or lines with the teacher or a member of the class as leader. The leader shows one card to the first person on one side. If he answers the problem correctly, he may remain standing in line. If he misses it, he must take his seat, and the leader gives the card to the first person in the other line. Thus the game proceeds, and the side that remains standing longest wins.

Game 29. The Fish Pond



Color the outside of a small hatbox to make it represent a fish bowl. Make a host of small cardboard fishes. Color one side of the fishes gold and on the other side write a number combination. Place a paper clip on each fish's head for a mouth. Make a little fishing rod and at the end of the line tie a small magnet. Put the fishes into the bowl. Each child in turn casts the line and when the magnet attaches to the mouth of a fish he pulls it in and gives the answer to the combination. If he is correct, he may keep the fish. If not, he must throw it back into the bowl. The child who has the most fish at the end of the game wins.

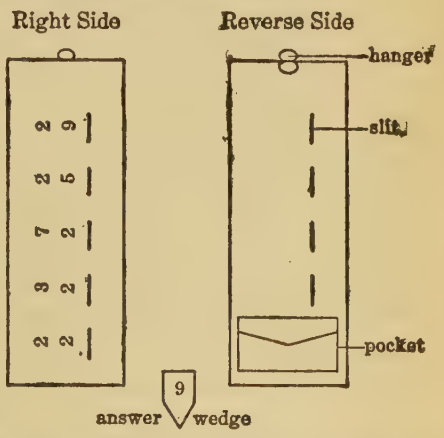
The bowl may be kept out on a table for individual pupil practice. In this case prepare answer cards so that the child drilling himself may look up the answer to combinations he fails to know.

Game 30. "Change Places"

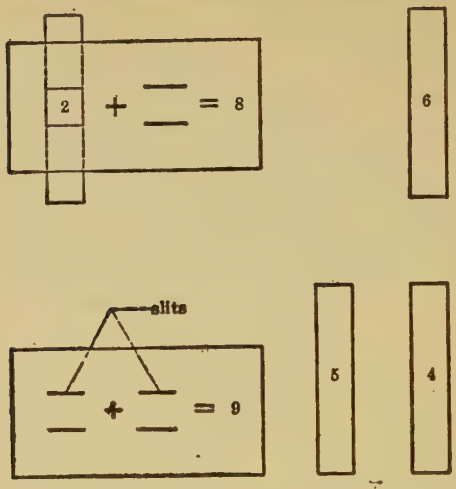
The children form a circle, sitting on the floor, one player standing in the center. Each player seated has a card with some number up to ten printed on it. The player standing in the center calls out, "Two and three change places," whereupon the two players called change places and also cards. If before they have reached their new places, some player on the floor calls out the correct sum of the two numbers called, he exchanges places with the player in the center, and the game proceeds.

Game 31. Problem Sheets

Prepare a series of long cardboard problem sheets, 10 × 20 inches, as illustrated, each having a hanger on one end and a pocket full of answer wedges at the other end of the reverse side. The child may take one of the sheets from the wall hook to his seat. He then removes the wedges from the pocket and places them as correctly as he can beneath the problems, using the slits provided for the purpose. When he has finished, he checks the correctness of his work by an answer card hanging on the same hook as the device.

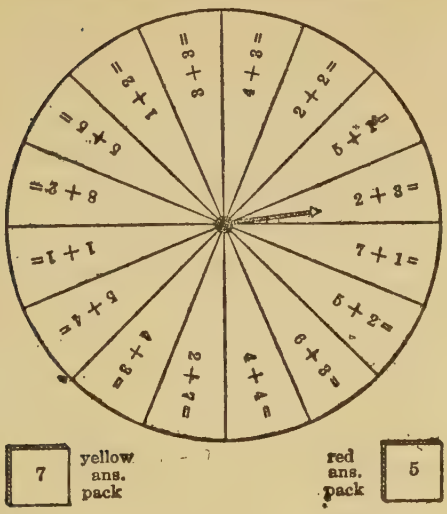


Game 32. Combinations Drill Device



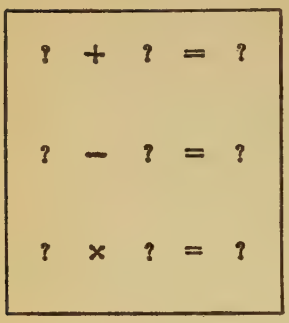
This number device consists of nine cards 6 × 12 inches, numbered from two to ten and ten slips of paper numbered in the same way. On each card there are two blank spaces, each outlined by a slit above and below. These two spaces are joined together by a plus sign and followed by an equals sign and a number. The object of the game is to insert into each pair of slits two numbers — on the slits — which when added together will equal the number on the card. The cards are as follows: $1 + 1 = 2$; $1 + 2 = 3$; $2 + 2 = 4$; $2 + 3 = 5$; $3 + 3 = 6$; $3 + 4 = 7$; $4 + 4 = 8$; $4 + 5 = 9$; $5 + 5 = 10$. The same device can be used for subtraction or multiplication.

Game 33. Addition Wheel



Make a cardboard circle with a hand, and arrange the problems in addition, subtraction, or multiplication as in the diagram. Prepare two packs of answer cards. Make one pack out of red cardboard and one out of yellow. Two children play the game. The first one spins the hand. If he can, he places one of his answer cards beside the problem indicated. They continue playing this way in turn. The one having the most answer cards on the board when they stop wins the game.

Game 34. Problem Making Game

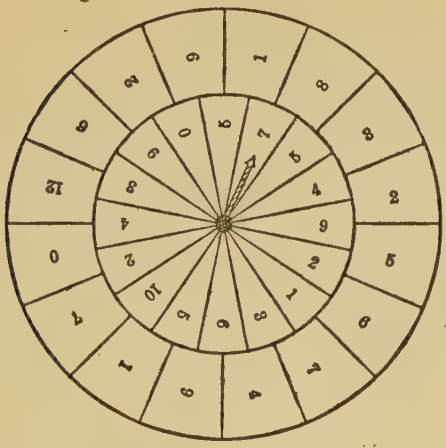


Make a cardboard similar to the one in the illustration. Provide a big box of miscellaneous number cards. Give each player the same number of cards. The one getting card X begins the game. The first player covers the two problem question marks on the board with numbers, making an example, and tells the child on his right to place the correct answer number beside the example. If the child answers the problem correctly, he may make up another example and ask the child next to him to put down the answer. If the answer is not correct, the next player on the right is given a chance. As soon as the correct answer is placed on the board, the cards are taken up again and a score given to the one answering correctly. The player with the highest score at the conclusion of the game, wins.

Game 35. Group Subtraction Game

Every child but one is given a card with a number on it. The child without a card comes to the front of the room and asks any of the children, "If you add 2 to your number, what will you have?" "I shall have six" (if the number is four). "Then your number is four," says the questioner. In this way the game proceeds until the questioner misses, when his place is taken by the last one called upon.

Game 36. The Double Wheel Race



Make a large and a smaller cardboard circle. Place the small circle on top of the large one. Put a cardboard arrow under the fastener which holds both circles in place. Each player has one of these devices. The object of the game is to see who reaches 100 points first. To play, each child whirls both inner circle and arrow. When they stop, the player makes the addition of the two numbers to which the arrow points. Players start on a given signal, play as fast as they can, and keep their own scores as they go along. The first one reaching 100 wins.

Game 37. Self-testing Combination Cards

Red answer cards

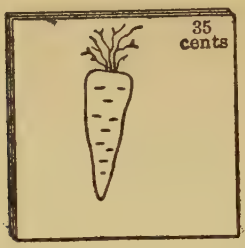
Blue combination cards

This is an individual drill device on the combinations. Each child may make his own cards. The cards with the combinations are inscribed in blue crayon, while the figures on the answer cards are made in red. The child lays down all answer cards on his desk and shuffles his combination cards. On a given signal, after he has made a note of the time, he starts laying down the combination cards under the proper answer cards. When the pack of combination cards is exhausted, he again makes note of the time and records on the graph the time it took him to play the game. In picking up the cards he will check his accuracy. If a wrong card is found he will add thirty seconds to his playing time as a penalty. In this game the pupil tries to beat his own record.

Game 38. Advanced Combinations

This is an addition, substraction, or multiplication drill device made out of two cardboard circles and an indicator, placed and numbered as in the illustration for game 36. Any number of children may play the game. The first player spins the indicator. When it stops he takes the number pointed to and, while turning the outer circle, adds the number of the inner circle to each number turned on the outer circle. With children more advanced it can be used for drill in multiplication or subtraction; they must remember always to subtract the smaller number from the larger. For each answer given correctly the player wins a point.

Game 39. Playing Store



This game of store is played with the following materials: a box of paper money, a sales pad, a pack of cards with foodstuffs pictured on them and prices listed in the corner. As many children as wish may play the game. Each player has a stipulated amount of toy money in dollars, half dollars, quarters, dimes, nickels, and pennies. As they make their purchases and pay for them, they carry away the picture representing the food they have bought, and the storekeeper records the sale on his pad. When his stock is exhausted a new storekeeper is chosen, the pictures are put back in the store, and the game is resumed.

Game 40. Class Drill Game

An exciting drill game for a second or third grade with rows of desks is played as follows. Each child takes the number of his desk in the row. If the child occupies the third seat in the row, his number is three. The teacher or leader stands before the class, states a number, calls a child's name, and gives him five seconds in which to give the sum of his seat number plus the one called by the leader. If the child answers correctly the leader and child change places. If the player is too slow or fails to answer correctly, the leader continues with the game.

REFERENCES ON PRIMARY NUMBER-WORK

Thorndike, E. L.: *The Psychology of Arithmetic.*
Thorndike, E. L.: *New Methods in Arithmetic.*
Every teacher of number work should read these two books.
Suzzallo, H.: *The Teaching of Primary Arithmetic.*
Freeman, F. N.: *The Psychology of the Common Branches,* chap. IX.
Brown, J. C., and Coffman, L. D.: *The Teaching of Arithmetic,* especially chapter XI.
Stone, J. C.: *How to Teach Primary Number.*

CHAPTER XII

THE ACTIVITIES OF THE PRIMARY SCHOOL

1. Art and drawing — Arts of the primary child vs. primary art — Child art and adult art — The beauty corner — The study of great pictures — Observation of art processes.
2. Music — The primary child's singing — When does he sing? — What does he sing? — Musical expression and impression — Shall we have class singing?
3. Handwriting — Handwriting not demanded of the primary child — Experts would delay the learning of this skill — Writing is taught too early — Advantages of manuscript writing — Procedure under present conditions.
4. Purposeful handwork — New types of instructional material — The passing of busy-work — Training in muscular coördination.
5. Recesses and outdoor activities — A different type of recess — Organized and free play — Excursions and collecting nature materials.

Selected references.

We still have to deal with a variety of activities in primary teaching that are related to one another in the purposes and in the mental attitudes involved. Included in this group are the work in art, in music, in handwriting, in construction, and in recreational games and plays. There is prominent as a motive in all of these activities, with the exception of handwriting, a development of appreciative and recreative habits and attitudes, especially involving training in the social conduct aspects, and in all of them there is a similarity in that they include skill learning.

1. Art and drawing

Arts of the primary child, *versus* primary art. Educators have talked much of teaching art in the public schools and have outlined courses for the teaching of art in the various grades, but it is doubtful whether we have so much as taken the first step toward building a foundation upon which real

art-education can be based. Art, as presented to the world by the artist, is not an elementary school subject, and the sooner we drop the term as applied to the commonplace drawing lessons of the grades the sooner we shall be prepared to approach the subject properly in the course of study.

Two things will be outstanding in a real art program in the primary grades:

(1) The teacher will be willing to give, give, give, with never a thought of return, because art for the primary child is a matter of receptivity and saturation.
(2) The teacher must not look for results, but should they appear, she will refrain from naming, cataloguing, classifying, or measuring them in terms of adult standards.

It becomes necessary for elementary teachers generally, and especially for the primary teacher, to differentiate clearly between art and drawing. Primary art is a matter of feeling and appreciation; primary drawing is a form of communication. In a recent book entitled *The Art of Seeing*, the authors, Woodbury and Perkins, say:

> There is a common belief that drawing of any kind must have some connection with art, and is judged accordingly. The remote relationship is there, but it is no nearer than that of an ordinary letter to literature. An early drawing, or one made by a person not especially gifted, should be taken as a simple graphic statement, adequate if understandable, but not to be tested by a standard beyond its purpose.

Primary drawing, then, is really a language subject, not an art subject. Would not this conception of art as a form of expression explain the reason for the conflict between the spontaneous line drawing of the child and the mass drawing method which the art supervisor tries to impose on him?[1] In this connection it is interesting

[1] Compare *Children's Drawings*, edited and compiled by Stella A. McCarthy, and published by the Williams and Wilkins Company.

to note that one recent writer excludes such drawing tools as crayons and pencils (line-drawing mediums) from her list of art materials.[1]

Because the primary child's experiences are dynamic and full of action, his pictures are. Art supervisors who go before their classes with model lessons of design, still life, and static objects, have overlooked the point of action and life in children's pictures. The figures in little children's pictures are always doing something; their drawings are symbolic and highly imaginative. Because the child draws what he knows exists instead of what he sees, his pictures usually lack perspective.

We no longer recommend the old formal method of teaching a drawing lesson by passing out paper and then insisting that all of the children stop their several tasks and problems to draw an assigned picture. The writer referred to above says in this connection:[2]

> If one accepts the point of view taken by Doctor Dewey, that "a mode of expression separated from something to express is empty and artificial, is barren and benumbing," one can but question the art imposed upon children. When this principle becomes a conviction, the art lesson that consists of telling the children first what to draw and then how to draw it cannot be justified.

Child art and adult art. The great Austrian artist, Cizek, who has visioned art from the child's point of view and has given the world such rich examples of child art, declares, in one of his published lectures: "People make a great mistake in thinking of child art merely as a step to adult art. It is a thing in itself, quite shut off and isolated, following its own laws and not the laws of the grown-up people. Once its blossoming time is over, it will never come

[1] Mathias, Margaret E.: *The Beginnings of Art in the Public Schools.*
[2] *Ibid.*, p. 1.

again." He claims that the years from one to seven are "the age of purest art."

The beauty center. To summarize our program in this department of child art, let us first make sure that we clearly differentiate between art and drawing. Such clarification will stop the decorating of classroom walls with friezes of children's drawing, done by an entire class according to teacher prescription. Since this is in no way art, it should not be hung before the child's eyes all day to produce distorted and inharmonious impressions. On the contrary, much real art should be brought into the classroom. The beauty center, prominently placed in the room, will house some art treasure such as a vase, a bit of real lace attractively mounted, a piece of statuary, a bowl of flowers, an oil painting, a piece of basketry, homespun linen, tapestry, or whatever of beauty can be gleaned from the homes of the children and teacher. The discussion concerning the history and production of these art treasures will form the nucleus of many a vital language lesson.[1]

The study of great pictures. One of the richest fields of art education is that of picture study, which in far too many cases has degenerated into a formal recitation of lists of pictures and their artists. Real picture study in primary education means the bringing of beautiful pictures into the classroom, allowing the children to help decide where they should be hung, and then hanging them on the eye level of the seated class. The pictures will be moved frequently enough to insure remanipulation and further study of detail. The magazine cover, poster type of picture will be hung on a rack or a bulletin board as illustrating topics of temporary interest. These racks and bulletin boards will never occupy the prominent place in the room set aside for the framed masterpieces. In planning the building of the

[1] Compare Samuels, Adelia Adams: *An About-Face in Education*, p. 110.

classroom it will be found as essential to provide proper and sufficient space for the correct hanging of all pictures on the eye level of the child as to provide proper blackboard space. Entirely too much attention and equipment has gone into the provision for the means-to-an-end subjects, such as writing, with little or no provision for such subjects as art, which are ends in themselves.

In connection with the study of pictures in the primary room, several helpful references for the teacher's use may be given. What children like in a picture has been well outlined in a monograph by Florence E. Bamberger, *The Effect of the Physical Make-up of a Book upon Children's Selections.* A very fine list of pictures for primary use, with suggestive discussions, is given in Charlotte G. Garrison's *Permanent Play Materials for Young Children.*

Observation of art processes. Finally, in our summary of the primary art program, let us surround the child with art processes as well as art products. Let us show him how we draw and mold and model, how we weave and paint and build. Let us call in the artists in our community and in our upper schools to work with the children, and to show them how the art work is carried on in metals and in textiles, in sculpture and in painting.

Much of our art expression will be incidental expression in connection with our other activities. To-day the progressive primary teacher is relating drawing and manual arts to the other subjects of the grade. If we are making a doll about which we are reading, we shall probably have drawing lessons in making the face. If we are writing a story in the form of a film, we may draw or construct the illustrations. If we are emphasizing silent reading, when the children pass to their seats we shall pass out cards with printed instructions, telling them just what to draw and what colors to use. Drawing of this sort enriches, beautifies,

and completes the work of the other school subjects. It gives the children, whose biggest task is to experience and express, another channel for learning.

2. Primary Music

The music problem of the primary grade should be considered from the point of view of the interests, capacities, and needs of the primary child rather than, as is most frequently done, from the point of view of the primary steps in music.

The program of primary-grade music includes two main divisions — expression and impression. Under expression we may consider singing and rhythmic play; under impression we would include listening to music played and sung.

The primary child's singing. Turning our attention to the problem of singing, we must attempt to answer the questions, *Why* the first-grade child sings, *When* he sings, and *What* he sings. Why does he sing? He sings because he is happy, to express an emotion. He expresses the idea through the medium of song for the same reason that he skips instead of walking. If singing, then, is an emotional expression, it is an individual expression, and only under the stress of a common emotion would a group all sing together. This impelling group emotion might be the pleasure of the teacher, her request, preparation for a play or a performance, a game, or a united emotional experience such as a downpour of rain, a parade of soldiers, or a flag-raising.

When does the child sing? He sings when he is moved by emotion, when he is pushing a toy engine about the floor, chasing a butterfly, rocking a doll. He sings when he is busy working, or playing, or thinking. Just as the youth whistles as he works, and as the mother sings as she washes dishes or

mends, so the little tot sings at his play, and, because the play of the first grader is still quite individual, his singing is usually to himself.

What does he sing? He sings what he is thinking about, playing, or doing, or he sings what he longs to be doing. He sings what he has heard others sing. Sometimes his song takes the form of a chant; sometimes it is a story told on one or two simple tone intervals; and sometimes it expresses a variety of tone and time.

What his song is will largely be determined by his previous song knowledge and experience. So, again, it presents the problem of individual differences. If the child is tone deaf or a "monotone," his expression will follow accordingly, and it will be the teacher's problem to work with him alone in clarifying and expressing tone when the interest in his play or work supplies the emotional driving force. As he sings *ding, dong,* and pushes the toy train under the block bridge, the teacher seizes the opportunity to get down on the floor with him and also sings *ding, dong* — first high, then low. Playing thus with the child, she leads him unconsciously to imitate her tones, thereby helping him to clarify his expression or to increase his range.

Turning from our critical observation of the child's singing to the curriculum, we are confronted with the questions, How, and What shall we teach him? The school in the past has given too much musical expression in place of musical impression. The age of primary education is an age of impression, an age of receptivity; it is the age when we should be pouring beautiful music in abundance into the child's thought, giving him many musical patterns, ideas, and experiences without at the same time demanding that he immediately give back. We must build up a musical foundation, appreciation, and a listening ear. Then, when his own voice instrument has developed and matured

through tone manipulation, he will be in possession of both the "what" and the "how" of song expression.

Musical expression and impression. Our music-teaching program in the primary grade is, then, twofold:

(1) To give the children an abundance of pure, lovely music, on the victrola, piano, any and all instruments, and by singing to them.
(2) To go among them as they work and play, and help them make clear tones, high and low.

We must aid them first to hear accurately, and then to express what they hear. This second task is an individual one. As a group within the grade or the grade as a whole reaches the point in technique where it can handle simple song phrases and melodies, the teacher should begin with the less difficult ones and build up in the scale of complexity a repertoire of attractive primary songs.

With regard to the impression side we are also confronted with an individual problem. Appreciative listening to good music is not to be regulated as a group affair. Let us not err by forcing a roomful of children to sit down and listen motionlessly to a lesson dubbed "musical appreciation." The child will of his own volition edge over to the music, as a flower gropes for the light, when he has had sufficient previous musical background to have grown to a point of appreciation. Only then will he truly hear and understand what he is hearing. Music is understood by those who hear its language. In his play corner strains of music will reach the child, and be accepted or rejected until they build into a larger whole and call more loudly to him, urging him to leave his play or work and come and listen. It is then that he will sit motionless and drink it all in. At this point the teacher must be careful to refrain from questioning, "Now, John, tell us what the music is saying to you." John's giving must be spontaneous, for he is still in the "getting" stage of

musical education. The child with the richer musical heritage will hear music first, and will listen to it longest.

In the experience of the child growing in the knowledge of music, expression takes the form of rhythm. Sometimes he expresses this rhythm through his body, and sometimes through the use of instruments outside of himself. In meeting this second type of rhythmic expression it has been found most successful to use simple percussion instruments, such as the tambourine, drum, triangle, horsehoe, xylophone, castanets, cymbals, sandpaper blocks, and bells.

3. Handwriting

Handwriting is a form of handwork related on the one side to the primary child's work in drawing, and on the other to his work in reading. The primary impulse to draw, as we have seen, arises from the child's need of communicating his ideas. Primitive man so used this art, but as the race developed, word and letter symbols were substituted for picture writings among the more progressive peoples. The child cannot communicate his ideas by word symbols in writing until he has begun to master these symbols in his reading. The pre-school child's social needs for communicating his thoughts are adequately met by his development of speech, and the adult illiterate still finds this single avenue of communication adequate.

Writing not demanded of the child. For some time after the child enters school there is no urgent demand made on him to communicate his ideas by writing. During a part of this time most children resort to drawing as an auxiliary to speech in expressing their thoughts. The pictures that the child sees present ideas to him, and he attempts, in drawing, to make pictures represent his own ideas. In his leisure moments we find the primary child drawing, scribbling, painting, printing letters seen in newspapers

and posters, printing his name, occasionally writing his name, making numbers, keeping score, and labeling. It is natural for him to print. All around him he sees examples of print, and, obeying the law in his nature, he imitates. Society makes no demands upon the kindergarten or first-grade child for the communication of his ideas through the method of written verbal symbols.

Gesell[1] tells us that:

> Handwriting is one of the latest and highest achievements of man. . . . Like all great things, it is the result of a long gradual development.

In fact, writing is probably one of civilized man's highest practical achievements, and from the point of view of the learning processes involved is one of the most complex skills he has mastered. The art involves an elaborate co-ordinated control of many fine muscles in the arm, wrist, hand, and fingers. The mastery of this coördination involves a very considerable degree of muscular development and poise before it can be successfully undertaken.

Even one of the leading commercial writing specialists, Zaner, makes the statement:[2]

> By nature, the child is not old enough to learn to write rightly until about ten years of age, and not old enough to master so difficult an art as writing until of high-school age.

Why, then, are we teaching writing to the six-year-old?

Writing is taught too early. The first year of school is the time when many new and strange skills are being introduced to the child, all at one time. In view of what we know regarding habit-formation, these skills should be introduced one at a time, and each stressed until the fundamental

[1] Gesell, A. L. and B. C.: *The Normal Child and Primary Education*, page 203.

[2] Zaner, C. P.: *Teachers' Manual*, no. 2, page 1.

habits are pretty well grounded, before other new skills are introduced for mastery. Further, the skill which society demands first of the primary child is reading, and next, number manipulation. Should not these two precede writing in the order of introduction into the course of study?

Again, writing is a highly individual skill, and our methods of instruction at the outset should consider the individual differences in hand, arm, and body structure as regards size, shape, strength, grip, hardening of the small wrist bones, and wrist muscular flexibility. The children differ in nervous stability, poise, rhythm, interest span, power of concentration, ability to coördinate eye and hand movements, endurance, and health. All of these factors materially affect the ability to write, and must be taken into consideration by the teacher.

Advantages of manuscript writing. The method of manuscript writing used so universally in England, and in many experimental schools in this country, has much to recommend it. It is basically a form of print which children see all about them, and naturally imitate. The writing is made up of short straight and curved strokes which consequently involve very short spans of construction, owing to the fact that in beginning writing the letters are not joined. It requires, therefore, little if any neuro-muscular poise and protracted attention. The letters are drawn, as it were, which is in accord with the child's graphic interest. It eliminates the change from print to script in teaching beginning reading. It is more legible for beginners, and does not call into play small accessory muscles nor exclude finger control if that proves to be easier for the individual child. It would, therefore, appear to be the more natural system for the child to adopt when he arrives at that point where a form of symbol communication is necessary.

However, we must consider the problem of teaching hand-

writing in the primary grade under the conditions as they are universally found in the schools of our country at the present time. Whatever we may think about the advisability of delaying the instruction for several years, or of introducing a new method that will simplify the art, we must recognize the fact that present practices are likely to continue for some time, and meet them as best we can.

Procedure under present conditions. Permit the kindergarten and first-grade child to continue to communicate his ideas through drawing, scribbling, printing, or similar activities, working with the individual as the needs arise to hold pencil and paper correctly, stand properly at the board, write on a level with the eyes, and use a free sweeping movement which tends to break up cramped, nervous, and forced habits. All the while that progress is being made individually in these directions, two other habits most fundamental to writing success are being established — rhythm and coördination of eye and hand, and quick and accurate word and phrase recognition. The first is being taught through the channels of music, games, play, dramatization and handwork; the other through reading. Thus the first-grade child is really getting indirectly his most valuable training in the fundamentals of writing.

When the child is promoted to the second grade, he has grown a little more social, has a more fundamental sense of rhythm, a better muscular coördination, an ease and skill in handling writing tools, a wider eye span, and more accurate word recognition, since the multitude of new reading habits are by now becoming fixed and reliable tools. A stronger need and desire for writing have developed with a widening of social contacts, and these demand a more flexible form of communication. The teacher will adapt the prescribed method of her school system or State to the individual capabilities of her group and launch a more formal type

of writing technique, as the course of study now demands. Foremost in her thought, however, will be these points:

1. Writing is a means to an end, not an end itself.
2. The child is the point of interest, and not any system of writing.
3. All over the country alert students of child psychology are experimenting with various methods of teaching writing. Keep closely in touch with these experiments. Experts are not all agreed on such an important element as the movement of the fingers in handwriting. Experimental investigations tend to favor finger movements, while the leading writing systems prohibit or discourage them.
4. In so far as instruction in handwriting in the primary grade is confined to blackboard writing, it involves the teaching of quite a different skill from handwriting with paper and pencil or pen. The former is not seriously out of harmony with the child's muscular coördinations, but the desk work involves finer coördinations than he is capable of, and should be avoided as an unnatural strain.
5. If handwriting instruction is required in the course of study, conduct the blackboard work in the spirit of a game. Some of the Manuals published by the commercial writing systems give adequate details for this phase of technique.
6. Do not expect artistic results, and do not insist on finished corrections of product. More attention should be given to the overcoming of extremely awkward writing movements, but even here virtue lies on the side of leniency.

4. Purposeful handwork

New types of instructional material. The industrial arts, or handwork, materials used ten years ago, were expensive packages of cutting, folding, coated, construction, and mounting papers, looms and weaving threads, boxes of water colors, weaving mats, and needles. To-day we observe a movement away from the specialized, commercially prepared materials to the discard materials of the workaday world and its craftsmen. Roughly classified, they include discard cuts of wood, dyes, buckets of paint, rolls of wall-

paper, unprinted newspaper, wrapping paper, string, hammer, nails, cloth goods, thread, needles, clay, and such discarded home materials as paper bags, cans, and boxes.

The use of such common craft materials has greatly reduced the cost of the industrial arts work, has linked the home and school more closely in a coöperative use and conservation of discarded articles, and has greatly influenced the constructive use of leisure in the child's out-of-school hours. In his home, whatever the means or the community, there are materials at hand to suggest play. The tin can, box, and spools will make a good train, the oatmeal box a good cradle, the clothespin a cunning doll, and the laundry cardboard a fine popgun.[1]

Turning from the materials themselves to their use, we find quite a radical change from the purposeless articles and the miniature picture constructions to real play toys and articles of utility. In place of making a tiny paper wagon that can only be looked at, the child of to-day in the primary grade is being taught to make a sturdy wagon that can be played with vigorously.

The passing of busy-work. The term "busy-work" was handed down to us as a classification of all kinds of activity engaged in by the children in a room who were not in a "recitation" with the teacher. While the teacher was hearing class A recite, she gave class B some "busy-work," which was intended to keep them quiet and out of mischief. For such work no one ever really claimed an educational objective. Peg-board filling, bead-stringing, clay modeling, alphabet-maneuvering, spool-braiding, and loom-weaving were among the most popular activities.

Primary education of to-day has relegated the term "busy-work" and its aimless activities into the discard, and for two

[1] For a detailed treatment of the use of such materials in school handwork, see *Purposeful Handwork*, by Jane W. McKee.

reasons: first, because as a result of the studies of individual differences and the testing movement, a roomful of children is now divided into many small groups instead of two larger ones; and, secondly, because purposeful activities in the form of study guides and games have filled the place of the purposeless amusement type of pa[illegible]g time between recitations. These study guid[illegible]es are largely reading and number exercises, carry[illegible]orward the work launched in the recitation period.[1]

Groups that are not engaged in study projects are building with blocks or playing with dolls in their respective interest centers, or are carrying on industrial-arts pursuits, such as are suggested in the preceding section.

Training in muscular coördination. Through studies made in the field of child growth and development, the school world has come to realize the importance of stressing big-muscle activities in primary education, as well as in the later years. The later poise and nervous stability of the child are dependent upon the natural coördination of accessory and fundamental muscles. This harmonious development is carried on consciously in primary education through manipulation plays involving the entire body; by the use of large play apparatus, toys and building blocks; by rhythmic plays, dances, and singing games; by art work done at large floor easels, and writing at the blackboard and on poster paper; and by the use of handwork materials and tools on an enlarged scale.

5. Recess and outdoor activities

A different type of recess. In buildings where there is no provision for the carrying on of activities on porches or terraces opening out from the classrooms, it is necessary for

[1] A large number of these devices for work in reading and numbers has been given in Chapters X and XI of this book.

A Sand-Table Construction Project in the Second-Grade Room
of a Los Angeles School

the teacher so to arrange her schedule that the children may have periods of play in the open air and sunshine. The arbitrary hourly recesses of the formal school introduce an awkward situation, since they force the children *en masse* to lay down their work or conclude it, and to pass through the halls in large unwieldy groups. The recesses are too short to permit whole-hearted fun, and participation in games carried to completion. If the primary recesses are held in common with the school as a whole, there is little or no opportunity for the classroom teacher to be with her own group in carrying forward the purposes of the day. Such general recesses promote accidents and lack of harmony on the grounds, interrupt perseverance on the part of the child at work, and have no logical part to play in the development of the primary day's work.

A decided step for the better is to be found in the practice of having separate room recesses, under the supervision of the regular grade teachers with their own group. If the teacher is given some freedom in shifting the class activities to the open air, at times when the need arises or when the type of work lends itself most naturally to open-air play, we have a most desirable situation.

Organized and free play. The outdoor activities of primary children are governed by the materials or their environment. Ideal equipment includes a large shaded sand pit, enclosed with seats which open to house the tools of play; free, sunny, open spaces for the simple rhythmic plays and elementary games; enclosures provided with packing-boxes, barrels, ladders, and boards for dramatic and manual play; a garden to tend; a shallow pool for wading; a few pieces of safety apparatus, such as swings, teeters, slides, balance beams, swinging-rings, merry-go-rounds, climbing-ropes, and turning-bars. To supplement and complete this list we shall need soccer balls, ropes, bean bags, and a portable

phonograph to provide music for singing games and folk dances.

The organized and free-play activities of primary children should carry over naturally from indoor pursuits to outdoor play. The children may gather outdoors individually upon completion of their indoor tasks; this plan handles the transition by carrying outside the purposes of the classroom, and harmonizing the entire day's activities through correlated interests.

Excursions, and collecting nature materials. Exploring and collecting are joys which primary children share in common, but much of the element of mystery, wonder, surprise, and delight has been subtracted from excursion experiences by the barren and pre-planned trips, organized by well-meaning teachers of primary nature study. Certain pre-planning is of course prerequisite for a successful excursion. One must know something of the distances and opportunities offered, the safety of and the necessary permission for entering grounds, the interests in general that may be observed, and the provision for bringing home the treasures. Beyond this the trip should be full of discoveries, surprises, and revelations for the teachers as well as for the class. The place chosen for the excursion must be rich in possibilities and easily accessible. Excursions are usually motivated by the enthusiasm of one who, having enjoyed the trip, fires the interest of the group by relating his adventures and producing his specimens.

To the teacher, who appreciates the educational possibilities hidden in this wonder world of nature, excursions will not be a burden, and on returning home she will provide observation cases for specimens and allow sufficient time and aid in classifying and mounting the treasures. The wiggly, woolly bugs; the worms and small animals; the shells, pebbles, leaves and flowers — all will find place in the class-

room, and form the nucleus for language and reading lesson story, song, and picture.

Excursions other than nature explorations will also form a part of the primary program. Visits to the library, zoölogical park, public buildings and places of industry and trade and transportation, as well as to the school plant itself, including lath-house, gymnasium, auditorium, shops, and domestic-science laboratories, have their part to play in extending the child's experiences through observation.

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CHAPTER XIII

EXPRESSION AND LANGUAGE WORK

1. Language work in the primary school — The field of language mastery — Relation of primary language work to that of the later grades — Psychology of language learning — Mental phases of language control — Importance of imitation — Stages in learning — Relation of habit to imitation — The effective element in language learning.
2. The expression work of the primary grade — Two phases of the work — Vocabulary building — Freedom vs. correctness — Methods for attaining freedom of expression — Methods for promoting correct expression — The most common errors — Oral drill games — Oral reading for pronunciation and enunciation, and general language ear training — The language function of story-telling — Casual constructive correction.

Selected References.

1. Language work in the primary school.

The field of language mastery. The child's development in the mastery of his native language involves a variety of activities, which may best be illustrated by the fact that a number of distinct school subjects deal with this phase of the child's development. In order to master his mother tongue so that it will be a useful agent in social contacts, the child in school must study a number of related "subjects," such as reading, writing, spelling, grammar, composition, and literature. Some of these formal subjects include several distinct activities, which may further be enumerated to give a still more definite idea of the complexity of language learning.

Reading not only involves the process of symbol recognition, but also includes training in pronunciation, enunciation, and vocabulary-building. In the subject of *spelling* we give considerable attention to these same elements, as well as to the learning of the correct combinations of letters to

form words. *Grammar*, as a school subject, may be said to involve two distinct lines of work: the learning of rules, definitions, and inflection forms, and the application of these to the parsing of words and the analysis of sentences; and the formations of such control over speech and writing habits as to insure correctness, or conformity with the accepted grammatical usage. *Composition* involves two distinct activities, which are usually designated as oral and written composition. Each includes quite a variety of types. Of all these it is important, for elementary pupils, to distinguish only in oral expression the conversational activity and the informal talk to a group. Both oral and written composition include the application of grammatical rules to their respective forms of expression, and are intended to provide practice in the grammatical habits involved; in addition, in the more advanced stages, the work in composition involves practice in such rhetorical elements as logical organization, fluency, clearness, the choice of diction, and in the elements of beauty and force. The study of *literature* is an extension of the work in reading, and is intended to build up especially an appreciation of the more artistic elements of thought and feeling so far as content is concerned, as well as an appreciation of the æsthetic elements involved in literary form and in the types and style of the masterpieces studied.

Relation of primary language work to that of later grades. Some of these phases of language mastery that affect primary work have already been discussed in the earlier chapters, especially reading (Chapters IX and X) and writing (Chapter XII). Other phases, such as spelling, formal grammar, written composition, and literature, are taught only in the more advanced grades. This leaves as the language problem of primary grades such matters as vocabulary building, the formation of correct speech habits from the point of view of the grammatical elements involved, and

the first steps in the practice of oral expression. For the last of these the primary work includes inprovements and extension in pronunciation and enunciation, as well as a development in freedom in conversation and in talking to the group.

The psychology of language learning. In order to understand clearly our language problem along these three lines, in the first years of the child's school life, we must see it against the background of the whole psychology of language mastery. This will enable us to recognize the different stages in language learning, and the particular function of the school in the earlier years of the child's development in language control. The problem that confronts us here includes the relation of language to thinking, as well as the relation of language to expression. If we accept the more advanced point of view of present-day psychology with reference to the relation of language to thinking and expression, we shall have to start out with the premise that we cannot think without words, and that we cannot think clearly without a correct observance of the relation of words in the sentence.[1] Such a premise will give us a safer point of departure for our practice in language teaching, without necessarily involving us in a controversy that is still waiting for experimental proof.

Mental phases of language control. As a first step we may enumerate the various phases or functions of the mind, as they have been commonly distinguished by psychologists, that are involved in language control in the field of vocabulary, grammatical correctness, and freedom of oral expression. Most prominent of all are the activities usually designated as imitation and habit. These functions are especially prominent in the pre-school and primary language learning. It is not until some years later, and then only

[1] Compare, for example, Watson, J. B.: *Behaviorism*, chapters x and xi.

occasionally, that rational control by reference to ideas or concepts or rules or inflections plays a part in language mastery. The element of feeling, involved in ideals of carefulness and correctness, plays a larger part in the upper grades if proper motivation is supplied, but this appeal to pride or other social factors cannot be of great use in teaching language control elements in the first years of school life.

Imitation, the key to language mastery. The first important factor in language mastery is imitation. We are not to think of this as a general instinctive capacity for learning, but as a social *mode* of learning. From social psychologists, who have all been influenced by Gabriel Tardé's book on *The Laws of Imitation*, we may adapt the idea that in language learning, as in the learning of any art that constitutes a part of our social inheritance, several distinct stages can be identified. Four stages are usually distinguished in the imitative learning of any social art, namely: (1) custom imitation, (2) conventionality imitation, (3) rational imitation, and (4) origination. The last of these, in language learning, falls quite outside of the school period. The great fault in our program of language teaching in the schools has been the failure to recognize the fact that there are distinct stages in the development of language mastery, and also in placing too great and too early an emphasis on the rational imitation stage.

The first phase of this imitative learning of language, that of custom imitation, is represented by the home influences before the child comes to school. The second, the imitation of the conventional, is represented by the earlier school experiences in language learning, with the teacher as the model. The third, the rational phase, represents the influence of formal grammar and the reading of standard classical literature. Each of these stages or phases is accompanied and followed by a period of habit fixation.

Our most serious problem, as far as teaching language in the schools is concerned, arises from the fact that we get the child in the primary room at the second stage in the language learning process; that is, after custom imitation and its period of habit fixation have practically run their course. This is no inconsiderable period, for it extends from the earliest days of infantile prattle to the age of five or six. How firmly most of this customary language has become fixed may best be seen in the difficulties we have in uprooting bad habits of speech. With all school instruction, and with the example of a majority of their classmates tending to counteract it, some children do not slough off their baby-talk for a year or two. Ungrammatical expressions learned in that early period persist for years, although it must be recognized that such usage gets encouragement and practice in the school, along with the more conventional models which the teacher supplies.

It is painfully evident, from a brief experience in the schoolroom, that the "customary" language of the home has a three or four years' start of the school, and that it continues to exert, far into adolescence, an influence parallel with that of the teacher. For the sake of the comparison we may now designate the teacher of the earlier grades, especially, as the "conventional" influence, at least in all those cases where the home-language influence is not of an equal or superior standard as compared to that of the school. The influence of the child's associates in and out of school is also an important factor, and usually a detrimental one, in forming language habits. Altogether the "unconventional" influences are usually more powerful than the corrective standards of the school, except in very favorable communities.

In the third stage we try to influence behavior by setting up formal rational standards in the way of definitions, rules,

principles, and the models of successful masterpieces, which are to serve as general laws to be applied to specific usage. In language learning this stage is largely represented by the instruction in grammar and rhetoric in the upper grades and the high school. The most important question affecting our school practice in language work is, Have we not, in the past, placed the stage of "rational imitation" too early? Or, possibly, have we not left grammar out in the place where it would be a more effective language control? This involves a problem in the grading of material in our English curriculum that can only be determined by carefully controlled experimentation. As far as the primary grades are concerned we are quite well agreed that formal grammar has no place as a language control; that the problem is altogether one of setting good models and giving plenty of opportunity for drills that will fix the correct habits.

Relation of habit to imitation. In the matter of language mastery, imitation and habit are really different terms for the same thing, applied from a different point of view. Imitation is language mastery from the point of view of learning, or source; habit is language mastery from the point of view of usage, or attainment, or result. Imitation is the method of learning; habit is the method of use. Imitation gives pedagogy the method of model; habit gives it the method of practice or drill. In language usage the great problem lies in the field of habit.

Reduced to its simplest terms, the problem of language teaching, especially in the primary grades, is not so much the development of proper habits of speech as the overcoming of improper habits learned, in the most formative period, at home. Both the habits produced by the imitation of wrong customs and those produced by the imitation of right conventions may be thought of as blind habits. The wrong habits are inculcated without regard for rules; the right con-

ventions also have to be built up into substitute habits without the aid of rules. We cannot wait to begin our corrective drills until the pupil can understand the rules involved. Rational language habits are not attained by the majority. Whether the rules and forms of formal grammar function to any great extent as a language control is a matter of violent controversy, but school practice is rapidly developing on the assumption that grammar is of far less value than it was once claimed to be.

The affective element in language learning. The factor of feeling also has to be recognized in language learning. Affective elements enter into the formation of language habits. So far as judgment is concerned, good and bad models are equally acceptable to the child. In fact, some of the bad examples set before him seem to have a superior attraction because of the affective element involved. The element of secrecy, the glamor of boldness in defying conventions, and the charm of novelty are unfortunate affective accompaniments in the learning of slang, profanity, and vulgarity. The same element of getting pleasure out of defying convention can be seen operating with some children in their use of ungrammatical speech. On the other hand, in the learning of the conventional or proper forms, practically nothing aids the deepening of the channels of impression or expression but the element of frequency of repetition.

2. Expression work of the primary grade

Two phases of the work. There are two chief phases of the work in expression in the primary grades, namely, the development of the speech vocabulary, and the acquisition of freedom in conversation and in talking to the group. The former of these is closely related to the vocabulary building that has been discussed in detail in Chapter IX, in connection with the work in reading.

We must clearly recognize that the reading vocabulary of the child is soon to be differentiated from his expression, or his usable vocabulary. The discrepancy between the two grows rapidly as the child develops in reading ability. The reading vocabulary becomes much more extensive than the speech vocabulary, although many of the words in the reading vocabulary are very vaguely and imperfectly comprehended. The development of a speech vocabulary is made possible only by practice in expression. One cannot motivate or control the development to any great extent; only the opportunity to use words to express ideas can be given. It may be expected, however, that extensive speech experiences will compel the constant use of new words.

Freedom vs. correctness. Free expression seems to be a natural activity for children. Some children of kindergarten and primary age are quite irrepressible. Some have already learned serious inhibitions in a misdirected home training, where the old adage that "children should be seen, not heard" is still often followed as an important educational rule. In general, though, the school itself usually functions more effectively in inhibiting expression than in encouraging and developing it. The natural demands for disciplinary or studious silence are partly responsible for this, but as the child proceeds in the grades serious expression inhibitions are set up by the corrective criticism of speech errors. Even in the primary grade we begin this criticism.

The problem of correctness is an important and a serious one, but its relative importance, when compared with freedom of expression, has been greatly overrated. If the child is to become a public speaker he will probably be exposed to a training and association that will break off the rough corners. If he is to move in a circle where grammatical correctness is essential in conversation, his associations as he gradually enters the more select circle will give him the cor-

rect ear-and-speech habits. The problem of correcting bad speech habits will be taken up in a later section. For either of these extreme social needs for correct expression we may still raise the question, If you had to choose between freedom and correctness in public speech or in conversation, which would be preferable? Conspicuous success in popular oratory or in social conversation has often been achieved without grammatical correctness.

Methods for attaining freedom of expression. The primary teacher must begin the training in free expression; or, rather, she must encourage what we may call the natural instinct of the child to share his experiences, his thoughts, and feelings. Some of this opportunity for free expression comes in informal natural situations, as when the child first comes into the room in the morning and starts to tell his experiences at home or on his way to school. Whether this spontaneous urge to converse be directed toward the teacher or toward his classmates, the impulse should be permitted and encouraged as much as possible. Before school, or during free play in the toy, block, or doll centers, the prohibition of conversation is unreasonable. Some of the children, more diffident, who have already suffered expression inhibitions in their pre-school training, should be made objects of special conversational attention by the teacher.

In addition to this informal conversational expression, the teacher may plan a variety of individual or group language activities, with the idea of promoting freedom of expression and giving the child opportunities to build up his usable vocabulary by more or less formal practice.

Question and answer exercises, quite free from any motive or spirit of testing the pupil, may be developed in connection with the reading exercises, as well as in the construction and game activities. The questions may be asked by the teacher in a skillful way, so as to compel the use, in answering, of

new words just learned. Or questions may be invited from the children and answered by the teacher, or be referred to other children for an answer, in such a way as to socialize the exercise.

More extensive expression experiences, but less controllable so far as vocabulary usage or grammatical correctness is concerned, are found in having children tell something to the group — either relate a particularly worth-while experience, or retell a story that has been learned at school or at home. If the child has been absent from school a day or two on a trip with his parents, let him tell the group about some of the interesting things he has seen. If going downtown is an event, let the adventures be told. Home interests, pets, the exciting incidents of play, the experiences of older brothers and sisters, the circus, the movies — all furnish topics for free and often extended oral narration.

Promoting correct expression. As was suggested above, the problem of correctness has to be met in school in another way than by inhibitory criticism; it has to be attacked indirectly by drills in correct usage that will undo the bad habits home or associates are building up by incorrect usage. Because of the prevalence of a number of common errors, which are known to be persistent from the earliest days of speech throughout the high school period, and in many cases even through college, it is necessary to try to counteract, in every grade, the habit effects of bad English heard outside the school. These language mistakes are often well fixed by the time the child reaches the third or fourth grade; in fact, many of the incorrect usages have become habits in pre-school days.

A program of continuous, systematic drills is necessary, and the primary child has to participate in this correct training of ear and speech. It may well be that the earliest school years may be most important in correcting these bad

language habits. This is a matter still open for experimental demonstration; but, here, as in all habit learning, the earliest stages must be the most impressive. In the past we have not tried to overcome these bad speech habits by drill on corresponding correct forms. We have allowed the language controls to develop with little interference from the school until the child reached the upper grades, and then we have tried to effect a cure by the systematic study of grammar. This type of language learning is now generally recognized as of little value as a speech control.

The most common errors. Our work in trying to build up correct speech habits by drills in correct usage has been greatly assisted by the studies that have been made by Charters and others. These studies have scientifically listed for us the twenty-one most common errors of speech, and have indicated their relative importance. Fully 98 per cent of all mistakes in speech could be eliminated by the correction of these twenty-one errors. Some of these errors involve a language usage beyond that of the primary-grade child. Some of the leading errors that may be made subjects for drill in the primary grade are here listed in the order of their importance.

1. Confusion of past tense and past participle, especially noticeable with many of the common irregular verbs, such as the use of *seen* for *saw*, *done* for *did*, and *vice versa*.
2. Failure of the verb to agree with its subject in number and person. *He don't* is the most common violation of this type.
3. Use of the wrong verb, especially the confusion of *lay* and *lie*, *sit* and *set*, in their various parts.
4. The use of double negatives.
5. Redundant or repetitious forms, especially *have got*.

The first three of these types of error account for fifty per cent of all the mistakes commonly heard. These alone would constitute an adequate and worth-while program for

drills in the primary room. The teacher herself will discover others characteristic of the younger children, and can soon get a list of suitable items for corrective exercises. Without associating the work in a critical way with the mistakes of individual children, the teacher can easily find occasion to have offenders repeat the form by calling on other children to repeat the form also, and frequently by having a chorus repetition of such sentences. In some of the primary language books, such drill sentences have been cast into games which make drill work on the common errors less formal and burdensome than before.

Oral reading as language training. In the primary grade much of the reading must be oral, and this may serve as a training in language habits as well as in testing the child's understanding of the printed symbols. This oral reading gives the opportunity for practice in correct pronunciation and enunciation, an important element in speech habits that constitutes a part of our language problem. The oral reading will also function as a means for general ear training for correct language usage, and in some cases the teacher of the upper primary grade may make materials for oral reading that will purposely embody forms related to the common errors. The teacher may make her own set of reading cards embodying such sentences as, *I saw John at the ball bame. He sat near me. We have gone to the games many times.* Stories involving such forms should, of course, be used for oral-reading work, since the purpose is ear training in correct language forms.

The language function of story-telling. In the primary grades story-telling plays a large part, but often the important incidental values are overlooked. The question may well be raised whether the chief motive in telling stories to children is merely to entertain them. This attitude is very often taken by teachers. The content of many of the most

popular kindergarten-primary stories has little ideational or informational value, for example, *Peter Rabbit, The Gingerbread Man,* or *Epaminondas.* From an educational point of view the value of hearing such stories told must lie in the language experiences involved. Perhaps vocabulary elements are the most important. That seems to be assumed in many of the classic children's stories, because of the frequent repetitions of certain phrases. This is equally true of some of the primer selections, and in the *Mother Goose Rhymes.* No one would give a high value to the historical information in the rhyme, "There was a crooked man, who went a crooked mile." The value of the rhyme lies in the child's emotional response to the rhythmic jingle and the repetition. The contact with the word "crooked" has possibilities in language development.

Aside from his vocabulary experiences in hearing stories told, the child must get a great deal of valuable incidental ear training in the sequence of words in sentences. We can easily imagine some of these stories rewritten in slang and faulty grammatical structure, in which form they would surely exercise a bad effect on the child's language habits, especially if he were given to repeating them verbatim from memory, as children so often do.

Constructive language correction. Children come to school with a large body of language usage already fixed. Most children have accumulated, through their pre-school language learning, quite a few "weeds" in the "language garden." Such errors are not to be the subject of open criticism in the primary grade, yet the bad habit must be counteracted as early as possible. Where children in the primary grades make serious errors of the sort indicated in the Charters list, perhaps the best thing for the teacher to do is casually to repeat the sentence in its correct form, and get the child to repeat it after her. Sometimes such repe-

titions may be made several times, without the child's feeling that the teacher is criticizing in a severe or fault-finding way. The child has no rational control over his speech forms; it is all a matter of habit. Lecturing on incorrect usage or scolding is futile. Laborious substitution of new habits for old is the only solution of the language error problem, and the primary teacher has a place as important as any in the building of the new correct habits.

INDEX

Abstract counting, 264.
Accurate observations, complete, 172.
Activities, opportunity afforded by classroom, 9; freedom promoted by the kindergarten, 70; alternating with study, 123; programs, 190; number-learning, 260; art and drawing, 312–17; music, 317–20; handwriting, 320–24; purposeful handwork, 324–26; recess and outdoor activities, 326–29.
"Activity Flash Cards," device in number work, 289.
"Activity Instructions," a reading device, 229.
"Addition Pads," device in number work, 300.
"Addition Puzzle Cards," device in number work, 297.
"Addition Wheel," device in number work, 305.
"Advanced Combinations," device in number work, 309.
"Advanced Question-and-Answer Test," 106–07.
Affective element, in language learning, the, 337.
Air, in the classroom, 9. *See also* Outdoor activities.
"Alternatives Test," 110.
"Animal Books," a reading device, 248.
"Animal Flash Cards," a reading device, 250.
"Another Relay," a reading device, 246.
"Answering Question Cards," a reading device, 257.
Anticipation, in discipline, 138.
Appreciations, forming, 178; materials of, 179.
Appreciation lesson, the, 196.
Arabic figures, learning, 268.
Arithmetic, relation between primary and later work, 272.
"Around the Block," game in number work, 292.
Arrangement, of classroom, 10–19.
Art and drawing, 312–17.
"Association Test," 103.
Attitudes, social, formation of, 182.
Attitudes and interests, the child's, 59.
Authoritative punishment, 134.

"Bean Bag," game in number work, 299.
"Blackboard Directions," a reading device, 228.
"Blackboard Number Folders," teaching device, 286.
"Blackboard Number Stencils," device in number work, 282.
"Blackboard Number Stories," teaching device, 296.
Bolenius, E. M., 209, 222.
Books, for teachers' reading upon purposeful-activity ideal, 190; for story-telling, 194; upon vocabulary building, 205.
"Boxing Words," a reading device, 243.
"Broken Sentences," a reading device, 233.
Buswell, G. J., 222.
"Busy Squirrels," a reading game, 228.
Busy-work, the passing of, 325.

"Cafeteria Game, The," device in number work, 291.
"Calling Cards," a reading device, 250.
Cardinal number concepts, 266.
"Change Places," game in number work, 303.
Child nature, the needs of, 6.

Children, three types of, 75; psychology of, 156.
Choice-making, training children in, 142–44.
"Christmas Mail," a reading device, 241.
"Circle Race, The," a reading device, 245.
"Circus," test on the picture, 94.
"Class Drill Game," for use in, number work, 311.
Classification and testing pupils, 75–118.
"Classifying Object Words," a reading device, 237.
Classroom, primary; 3–23; what child nature demands, 3–8; criteria of the room, 8–19; a modern room, 19–23; physical conditions of, 120; artistic conditions of, 121.
Collecting nature material, 328.
"Color Questions," a reading device, 234.
Color test, 90.
"Colored Dominoes," device in number work, 295.
"Coloring Balloons," a reading device, 231.
"Combination Stencils," device in number work, 300.
"Combinations Drill Device," for use in number work, 304.
Complete accurate observations, 172.
"Completion Test," a reading device, 251.
Complexity, of number concepts, 266.
Concepts, the formation of, 173; memorizing facts in, 174; definition of, 174; number, 266.
Concrete counting, 265.
Conservative equipment, 46.
Constructive discipline, 128.
Constructive language correction, 343.
Content, of newer readers, 209.
Content vs. technique, 165.
Contractions Test, Language, 112–13.
Coöperation, training in, 183.
Coördination, muscular, systematic training in, 65–68.
Correct expression, ways of promoting, 340.
Correction, constructive, in language work, 343.
Correctness vs. freedom, in expression work, 338.
Counting, abstract, 264; concrete, 265.
"Counting Pad," device in number work, 298.
Criteria of primary classroom, 8–23.
"Crossing the Pond," a reading device, 240.
Curiosity, the child's natural, 52; developed by the kindergarten, 69.
Curriculum and method, psychology of, 165–98; psychology as a basis for method, 165–68; types of learning in primary work, 168–84; general methods in primary work, 184–98.

Daily program, 78.
Dalton-Plan classroom, the, 12.
Decimal system, first concepts of, 270.
"Definition by Uses," test on, 95.
"Definition Questions" a reading device, 232.
Detroit First-Grade Intelligence Test, The, 85.
Devices, in number work, 281–311; in teaching reading, 224–57.
Dewey, John, 262.
Directions, tests in following, 91–93.
Discipline, and classroom management, 119–44; cases of, 136–38; general principles in, 138–44.
Disciplinary personality, the teacher's, 140–42.
"Double Wheel Race," game in number work, 307.
Dramatization, 191–94.
"Drawing a Story," a reading device, 236.
"Drawing Instruction Cards," a reading device, 228.
Drawing and art, 312–17.
Drill, number, 277; skill, 185.

"Easter Basket, The," a reading device, 244.
Emotional cases, dealing with, 130.
Emotional traits, test for, 116; the teacher's, 154.
Entrance classification, of pupils, 75–81.
Environment, home, 53.
Equipment and supplies, 38–46; suggested equipment for Grades I–III, 39–42; toys, 42–45; material for acquiring skill, 45–46.
Errors, common, in language and expression, 341.
Examination, physical, 81–83.
Excursions, 328.
Experience, tests for, 88–117.
Expression, freedom promoted by the kindergarten, 70; imitation and habit in, 181; musical, 319; social, beginnings of, 180.
Expression and language work, 331–44; language work, 331–37; expression work, 337–44.

"Famous Picture Stories," a reading device, 248.
Figures, Arabic, the learning of, 268; association with number words, 275.
"Finding Hard Words," a reading device, 240.
First-grade reading, the place in general reading program, 199–204.
"Fish Pond, The," a reading device, 243; game in number work, 302.
"Floor-Dominoes," device in number work, 289.
Following Directions, test in, 91–93; a reading device, 238.
Formal room, the, 5.
Fort Wayne, Indiana, list of toys approved by kindergarten and primary teachers, 42–45.
Free play, 327.
Freedom, the child in the home, 51; in expression, methods for attaining, 339.
Freedom vs. correctness, in expression work, 338.
Freeman, F. N., 262, 268, 269, 270.
"Furnishing a House," a reading device, 256.

Games, in teaching reading, 224–57; in number work, 281–311.
Gard, W. L., 72.
Gates, A. I., 191.
Generous equipment, 40–42.
Geography, facts in, 175–77.
Gesell, Arnold, 64, 65, 321.
"Going to School," a reading device, 239.
"Going to Town," a reading device, 252.
"Goose Pen, The," a reading game, 228.
Grading, of number material, 273.
Group psychology vs. individual psychology, 167.
Group spirit, how to build, 132.
"Group Subtraction Game," for use in number work, 306.
Grouping words in spans, 220.
Groups, of children, three typical, 76–78; simultaneous work of, 124.

Habits, the child's, 57; in learning language, 57; in learning numbers, 59; in expression, 181; the relation to imitation, 336.
Haggerty Intelligence Examination (Delta 1), 85.
Handwriting, 320–24.
Handwork, purposeful, 324–30.
"Harder Number Puzzles," device in number work, 284.
"Harder Puzzles," device in number work, 297.
"Hidden Numbers," device in number work, 283.
Home, place in the child's development, 50–54; freedom of movement, 51; natural curiosity satisfied, 52; sympathetic supervision, 52; enriched environment, 53; wide range of social experiences, 54; relation to school, 54–61.
"How Many?" a reading device, 236.
Howell, H. B., 262.

Ideas, the child's stock of, 60.
Imitation, in expression, 181; the key to language mastery, 334.
Impression, musical, 319.
Incidental learning, the child's, 27, 29, 32, 36.
Incidental number learning, 280.
Incidental vocabulary work, 211.
Individual differences, effect on assignments, 125–27; in primary number work, 280.
Individual psychology vs. group psychology, 167.
Individual record blanks, 79.
Individuality, the teacher's, 147.
Individualization, of instruction, 30.
Inductive lesson, the, 188.
Instructional material, new types of, 324.
Intelligence testing, 83–88.
Interest, centers of, in classroom, 10; child's, 59; developed by the kindergarten, 69; in reading, 207.

Jaycox, E., 216.
Jennings, H. S., 9.
Judd, C. H., 130.

Kindergarten, place in the child's development, 61–65; educational value of, 65–74; general preparatory value, 72–74; understanding of, 159.
Kindergarten-primary child, the, 49–74; place of home experiences in the child's development, 50–54; relation of the school to the home, 54–61; place of the kindergarten in the child's development, 61–65; educational value of the kindergarten, 65–74.

Language, the process of learning, 57; the problem in the school, 57.
"Language Contractions Test," 112.
Language control, mental phases of, 333.
Language learning, psychology of, 333.
Language mastery, psychology of, 181; relation of primary work to that of later grades, 332, 334.
Language work, 331–37.
Learning, laws of, application in choice-making, 143.
Learning, types of, 168–84.
Lesson-planning, 162, 197.
Light, in the classroom, 8.
"Little Bo-Peep," a reading device, 244.
Long Beach, California, new type of primary school buildings, 19.
Los Angeles, California, requirements in primary number work, 258–60.

"Magazine Picture Hunt, A," reading device, 255.
Management and discipline, 119–44; the meaning of classroom management, 119–28; the meaning of discipline, 128–38; general principles in discipline, 138–44.
Manners, 184.
Manuscript writing, advantages of, 322.
"Match," a reading device, 254.
"Matching Pictures," a reading device, 248.
"Matching Stories and Pictures," a reading device, 255.
Mathias, M. E., 314.
McCarthy, S. A., 313.
McKee, J. W., 325.
McLellan, J. A., 262.
Memorizing, in the primary grade, 170.
Mental equipment, the child's, 56.
Mental personality, the teacher's, 150.
Mental tests, the teacher's, 154.
"Meow," game in number work, 291.
Methods, general, 184–98; in primary number work, 272–81.
Minimum equipment, 39–40.
"Mixed Word Cards," a reading device, 254.
Morgan, J. J. B., 131, 158.
Moral personality, the teacher's, 151.
Moral traits, the teacher's, 154.
Morals, 184.

"Mother Goose Characters," a reading device, 238.
Motivating devices, 186.
Motivation, for number work, 281.
Music, primary, 317–20.
Muscular coördination, training in, 326.

"Naming Pictures," a reading game, 226.
"Naming Word Cards," a reading device, 254.
"National Holidays," a reading device, 253.
National Primary Council, equipment suggested by, 38–42.
Natural science, learning facts in, 177.
Nature material, collecting, 328.
Notation learning, excesses in, 279.
Number games and devices, 281–311.
"Number Groups," teaching device, 288.
Number habits, wrong, 59.
"Number Jumps," teaching device, 290.
"Number Matching Game," teaching device, 288.
Number material, grading of, 273.
"Number Pictures," teaching device, 295.
"Number Rhymes," a reading device, 235.
"Number Spell-Down," teaching device, 301.
"Number Test," 101–04.
"Number Windows," teaching device, 285.
Number words and figures, the meaning of, 261; association of, 275.
Number work, 258–311; aim, 258–60; psychology, 260–71; method, 272–81; games and devices, 281–311.
"Numbering Sentences," a reading device, 253.

Object lessons, 186; in primary arithmetic, 274.
Observations, complete, 172; supplying materials for, 173.
"On the Farm," test on the picture, 94.
"Opposites Test," 97.
Oral reading, as language training, 342.
Order, in classroom, standards of, 135.
Ordinal number concepts, 266.
Organized play, 327.
Osburn, W. J., 216.
Outdoor activities, 326–29.
Overlearning, in primary number work, 279.

Penmanship, 320–24.
Perception, the process of, 171.
Periods, changes between, 123; in teaching reading, 200–02.
Personality, disciplinary, 140–42; the primary teacher's, 145–55; the teacher's special preparation in knowledge and in technique, 155–62; a means to an end, 214.
Phonics, first work in, 213; when to begin, 217.
Phonograms, the most important, 214.
Physical equipment, the child's, 56.
Physical examination, of pupils, 81–83.
Physical personality, the teacher's, 149.
Physical traits, the teacher's, 153.
Pictures, the study of, 315.
"Picture Completion Sentences," a reading device, 247.
"Picture Cut-Outs," a reading device, 247.
"Picture Labels," a reading device, 237.
"Picture Pockets," a reading device, 246.
Pictures, test, 94, 98.
Pintner-Cunningham Primary Mental Test, The, 86.
Planning, in discipline, 139; in lessons, 197.
Play, organized and free, 327.

Play motivation for number work, 281.
Play projects, 189.
"Playing Cards," test on, 94.
"Playing House," test on the picture, 99–103.
"Playing Picnic," test on, 104.
"Playing Store," game in number work, 310.
Preparation, in discipline, 139; for reading, 209; the teacher and her subject-matter, 160–62.
Preparatory period, in reading, 200.
Pre-primary experiences, the child's, 50.
Pre-school children, psychology of, 156.
Pre-school number learning, the child's, 262.
Preventive discipline, 129.
Primary reading, psychology and method of, 199–223; place of first-grade reading in the general reading program, 199–204; practical suggestions for the teaching of primary reading, 204–23; devices for teaching, 224–57; reading games, 224–57.
Primary-teaching personality, the development of, 152–55.
"Problem Making Game," for use in number work, 306.
"Problem Sheets," device in number work, 303.
"Problem Squares," device in number work, 294.
Professional knowledge, the teacher's special preparation in, 155–62.
Professional personality, the teacher's development of, 145–47, 152–55.
Program, a typical day in a well-organized primary room, 32–35; daily, 78; testing, 81–118; activity, 190; lesson-planning, 197.
Progress, reading, tests of, 222.
Progressive equipment, 46.
Project curriculum, values and dangers of, 28–37.
Projects, play, 189; reading, 218.
Promotion, regrouping and, 117.
Psychology, of pre-school and primary children, 156; of curriculum and method, 165–98; relation to the learning process, 166; of primary reading, 199–223; of primary number work, 260–71; of language learning, 333.
Punishment, social and authoritative, 134.
Pupils, testing and classification of, 75–118.
Purposeful learning, the planning of, 35.
"Puzzle Cards," a reading game, 225; device in number work, 283.

"Question-and-Answer Test, Simple," 105; "Advanced," 106–07.

"Racing Board, The," reading device, 249.
"Railroad Trip, A," reading device, 239.
Readers, content of, 209.
Reading, kindergarten prepares child to begin, 71; psychology and method, 199–223; as a phase of number work, 277.
Reading to the children, 210.
Reading, silent, the place of, 221.
Reading games, 224–55.
Reading material, the selection of, 204.
Reading progress, tests of, 222.
Reading projects, in the first grade, 218.
"Reading-Word Drill Stories," a reading device, 229.
"Reasoning Test," 111.
Recess and outdoor activities, 326–29.
Recitation period, control of, 122.
Record, keeping the pupil's, 112–15.
Record blanks, individual, 79.
Regrouping and promotion, 117.
"Relay Race, The," a reading device, 245, 246.
Reorganization, of primary room, 24.
Repressive discipline, 128.
Research, in reading, results of, 202.

Responsibility, development of, 27.
Routine, in discipline, 138.

Samuels, A. A., 315.
"Santa Claus Toys," a reading device, 250.
School, relation to home, 54–61.
Science, natural, learning facts in, 177.
Scientific reading vocabulary, 205.
Selection of reading material, 204.
Self-organized groups, 26.
"Self-Testing Combination Cards," device in number work, 308.
"Self-Testing Number Stencils," teaching device, 287.
Silent reading, the place of, 221.
"Simple Question - and - Answer Test," 105.
Simultaneous work, of several groups, 124.
Singing, the child's, 317.
Skill, materials for acquiring, 45–46; training for, 160; prominence in primary work, 169; drills, 185, 277.
Social attitudes, the child at home, 54; promoted by the kindergarten, 68; control of, 127; the discipline problem, 131; formation of, 182.
Social expression, beginnings of, 180.
Social personality, the teacher's, 151.
Social punishment, 134.
Social traits, the teacher's, 155.
Spans, grouping words in, 220.
Speech habits, the child's, 58.
Starch, Daniel, 262.
"Stencil Completion Card," a reading device, 243.
Stormzand, M. J., 189.
Stormzand-McKee Primary Vocabulary Test, 113–16.
"Story Questions," a reading device, 233.
Story-telling, 194–96; the language function of, 342.
"Straw Pile," device in number work, 290.
Study, alternating with activity, 123.
Study period, control of, 122.
Subject-matter, the teacher's preparation of, 160–62.
Supervision, the child in the home, 52.
Supplementary preparation for reading, 209.
Supplies and equipment, 17, 38–46.
"Surprise Box," a reading device, 232.
"Synonym Test," 96.
Systematic testing programs, 81–118.

"Taking a Trip," test on the picture, 94.
Teacher, primary, 145–62; personality, 145–55; special preparation in knowledge and in technique, 155–62.
Technique, the teacher's special preparation in, 155–62.
Technique vs. content, 165.
"Telling Time," test on, 101.
Terman, L. M., 9, 63, 82, 84.
Testing and classification, 75–118; entrance classification, 75–81; systematic testing programs, 81–118.
Tests, of reading progress, 222.
"Things I Like," a reading device, 231.
Thorndike, E. L., 59, 206, 261, 262, 263, 264, 267, 268, 274.
"Toy Patterns," a reading device, 242.
Toys, approved list, 42–45.
Traits, the teacher's, 153–55.
Transitions, handling, 123–27.
"Twins' Birthday Party, The," a reading device, 230.
Types of teaching, general, 184.
Typical day, in a well-organized primary room, 32–35.

Ventilation, of the class-room, 9.
Vocabulary, tests for, 88–117; reading, 205.
Vocabulary tests, Stormzand-McKee Primary Record Sheet for, 113–15.
Vocabulary work, incidental, 211.
Vogel, M., 216.

Washburne, C. W., 216.

Watkins, E., 220.
Watson, John, 158.
Watson, J. B., 333.
Wheeler, W. H., 222.
"Which Is It?" a reading device, 242
"Winding Number Road, The," device in number work, 293.
"Word Ball, The," reading device, 255.
"Word Cards, Mixed," a reading device, 254.
Word devices, the use of, 213.
"Word Clock, The," a reading game, 227.
"Word Hunt, A," reading device, 244.
Words, lists used in tests for child's vocabulary, 88–90; list used in "Opposites Test," 98–99; lists used in "Association Test," 104; the teaching of, 211.
Work centers, 24–37; meaning, 24–28; values and dangers of project curriculum, 28–37.
Writing, as an activity, 320–24.

"Yes and No Game," a reading device, 237.
"Yes-and-No Test," 107–10.

Zaner, C. P., 321.